



# Alaska Resource Data File, Chandalar quadrangle, Alaska

By Joe Britton <sup>1</sup>

Open-File Report 00-357

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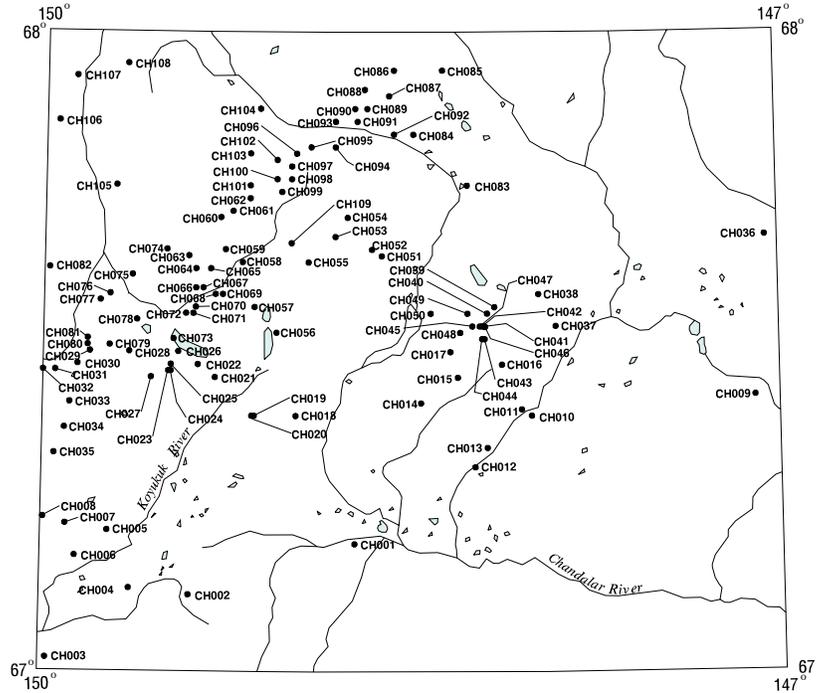
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**U.S. DEPARTMENT OF THE INTERIOR**  
**U.S. GEOLOGICAL SURVEY**

<sup>1</sup> Anchorage, Alaska

## Chandalar quadrangle

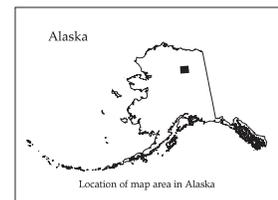
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences throughout Alaska.



*Distribution of mineral occurrences in the Chandalar  
1:250,000-scale quadrangle, Alaska*

This and related reports are accessible through the USGS World Wide Web site <http://ardf.wr.usgs.gov>. Comments or information regarding corrections or missing data, or requests for digital retrievals should be directed to: Frederic Wilson, USGS, 4200 University Dr., Anchorage, AK 99508-4667, e-mail [fwilson@usgs.gov](mailto:fwilson@usgs.gov), telephone (907) 786-7448. This compilation is authored by:

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**Site name(s):** West Fork

**Site type:** Occurrence

**ARDF no.:** CH001

**Latitude:** 67.20

**Quadrangle:** CH A-4

**Longitude:** 148.73

**Location description and accuracy:**

The West Fork occurrence is at an elevation of about 1,700 ft on the north side of the West Fork Chandalar River approximately 6 miles west of its confluence with the North Fork Chandalar River (NW1/4 sec. 6, T. 27 N., R. 5 W., of the Fairbanks Meridian ). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:** Ag(?), Au(?)

**Ore minerals:** Unspecified copper minerals

**Gangue minerals:**

**Geologic description:**

Occurrence is described only as Cu minerals in Devonian(?) volcanic rocks (DeYoung, 1978). An analysis of a rock sample collected by Brosgé and Reiser (1972) from this location showed 0.04 to 0.79 ppm Au and 1.0 to 3.0 ppm Ag. The occurrence also coincides with a location noted as an occurrence of metallic minerals (Cu) by Brosgé and Reiser (1964). No other data on the mineralization is available. The host rock unit is described as pyroxene andesite flows and pyroxene diorite intrusives, hornblende andesite pyroclastics, and some diabase and gabbro.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

The rock sample described by Brosgé and Reiser (1972) that contained 1 to 3 ppm Ag and 0.04 to 0.079 ppm Au appears to be from the general area of the West Fork prospect. The occurrence also probably coincides with the location noted as an occurrence of metallic minerals (Cu) plotted by Brosgé and Reiser (1964) along the lower West Fork Chandalar River.

**References:**

Brosgé and Reiser, 1964; Berg and Cobb, 1967; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Siwash Creek

**Site type:** Occurrence

**ARDF no.:** CH002

**Latitude:** 67.12

**Quadrangle:** CH A-5

**Longitude:** 149.40

**Location description and accuracy:**

The occurrence is at an elevation of about 2,100 ft in hills above the first significant fork in Siwash Creek upstream from its mouth and approximately 4 1/2 miles south-southwest of Boatman Pass. It is 17 1/4 miles east-southeast of the Myrtle Creek landing strip (SW1/4 sec. 31, T. 27 N., R. 8 W., of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Copper sulfides (unspecified) and/or malachite/azurite

**Gangue minerals:**

**Geologic description:**

This occurrence is described very generally as Cu sulfides and/or malachite-azurite stains and is located in an area mapped as a small body of chert within a Devonian(?) volcanic rock and chert unit (DeYoung, 1978). No other descriptive information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

See also: West Fork occurrence (CH001).

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Granite Creek

**Site type:** Occurrence

**ARDF no.:** CH003

**Latitude:** 67.02

**Quadrangle:** CH A-6

**Longitude:** 149.97

**Location description and accuracy:**

This site is at an elevation of about 1,350 ft on a principal left-limit tributary of Granite Creek, (SE1/4 sec. 4, T. 25 N., R. 11 W., of the Fairbanks Meridian) approximately 13 1/2 miles south of the Myrtle Creek landing strip. The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

No geologic data specific to this occurrence are available except the mapped lithologies in the vicinity. Mapping in the area shows Devonian(?) andesitic volcanic rocks and/or dioritic intrusives and discontinuous chert adjacent to a large mass of upper Paleozoic or Mesozoic granitic rocks (Brosgé and Reiser, 1964).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

Five claims staked in 1967 and suction-dredge work in 1969 (DeYoung, 1978).

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Slate Creek (CH007). Alaska Kardex No. 031-052 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** DeYoung, 1978

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (between South Fork Koyukuk River and Mosquito Fork)

**Site type:** Occurrence

**ARDF no.:** CH004

**Latitude:** 67.13

**Quadrangle:** CH A-6

**Longitude:** 149.64

**Location description and accuracy:**

This site is at an elevation of about 3,000 ft approximately 2 1/2 miles west-northwest of the confluence of Siwash Creek and Mosquito Fork (sec. 25, T. 27 N., R. 10 W., of the Fairbanks Meridian). This site corresponds to unnamed loc. 79 in DeYoung (1978). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:** Ni

**Ore minerals:** Unspecified copper sulfides and/or malachite-azurite

**Gangue minerals:**

**Geologic description:**

This occurrence is described only as Cu sulfides and/or malachite-azurite stains (DeYoung, 1978) at the contact between a Devonian(?) black phyllite-slate unit and a Devonian(?) unit described as diorite intrusives and andesite flows (Brosgé and Reiser, 1964). The presence of a hornfels adjacent to the igneous unit suggests that the igneous unit is a diorite intrusive. No other information is available.

**Alteration:**

Possible oxidation of copper minerals.

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (south of Winers Lake)

**Site type:** Occurrence

**ARDF no.:** CH005

**Latitude:** 67.22

**Quadrangle:** CH A-6

**Longitude:** 149.73

**Location description and accuracy:**

This site is located at an elevation of about 2,600 ft approximately 7 miles east of the Myrtle Creek landing strip and 3 miles southeast of Winers Lake (sec. 27, T. 28 N., R. 10 W., of the Fairbanks Meridian). This site corresponds to unnamed loc. 75 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Pyrite (?), unspecified copper sulfides and/or malachite-azurite

**Gangue minerals:**

**Geologic description:**

The occurrence is in an area mapped as Devonian(?) micaceous graywacke with several small bodies of greenstone (schistose hornblende diorite and pyroxene diorite) nearby (Brosgé and Reiser, 1964). It is described only as copper sulfides and/or malachite-azurite stains. No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Slate Creek

**Site type:** Occurrence

**ARDF no.:** CH006

**Latitude:** 67.18

**Quadrangle:** CH A-6

**Longitude:** 149.86

**Location description and accuracy:**

The Slate Creek lode occurrence is located at an elevation of about 3,100 ft approximately 4 miles southeast of the Myrtle Creek landing strip (sec. 12, T. 27 N., R. 11 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu, Mn

**Other:**

**Ore minerals:** Chalcopyrite, rhodonite(?)

**Gangue minerals:**

**Geologic description:**

The occurrence is described as blocks of talus as much as 30 cm in diameter of pink- and cream-colored silicates with manganese values as much as 22.23 percent (Fechner and others, 1993). Manganese oxide-stained chert with fine- to coarse-grained chalcopyrite was found nearby. The mineralized chert gave values of as much as 16.36 percent Mn. The manganese-mineralized rubble crops do not extend more than 30 m in any direction. The area is mapped by Brosgé and Reiser (1964) as within the chert unit of a Devonian(?) sequence of volcanic rocks and chert.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Volcanogenic Mn(?) (Cox and Singer, 1986; model 24c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

24c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
No known activity.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**  
Fechner and others, 1993.

**Primary reference:** Fechner and others, 1993

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Slate Creek (placer)

**Site type:** Mine

**ARDF no.:** CH007

**Latitude:** 67.23

**Quadrangle:** CH A-6

**Longitude:** 149.9

**Location description and accuracy:**

Slate Creek is a west-flowing tributary to the Middle Fork Koyukuk River, and the confluence of the two is at the old town of Coldfoot. The reference point, approximately 15 miles southwest of Poss Mountain, is about at the center of early mining activity on the upper creek (NE1/4 sec. 26, T. 28 N., R. 11 W., of the Fairbanks Meridian). It is approximately the same location as the symbol indicating recent mining in Brosgé and Reiser (1964). Mining in this area probably extended about 1 mile both up- and downstream from the reference point. There was also mining activity on lower Slate Creek below its confluence with Myrtle Creek in the Wiseman quadrangle. The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Much of the descriptive information available for Slate Creek does not distinguish between the lower part of the creek that lies in the Wiseman quadrangle and the upper part of the creek that lies in the Chandalar quadrangle. Reed (1938) reported that no deep channel was found on Slate Creek although placer gold was found on Slate Creek in the present channel and in high benches. On the upper creek (the part in the Chandalar quadrangle) the present channel was worked in the short canyon just below the reference point (about 2 miles east of the Myrtle Creek landing strip), and the old-timers were said to have rockered out \$8 per day (gold at \$20 per ounce). The present channel and a low left-limit bench were also worked from a short distance above the canyon for a distance of 1 1/2 miles. The bench was said to have bedrock only a few feet above the bedrock in the present channel. Bedrock is described as mica schist and slate or phyllite with small bodies of quartz and cut by several altered diorite dikes (this description may apply principally to the lower two-thirds of the creek). Upper Slate Creek lies along the boundary be-

tween Devonian quartz-muscovite schist and a Devonian(?) sequence of graywacke, phyllite, and volcanic rocks and chert (Brosgé and Reiser, 1964).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Mined mostly by simple hydraulic and hand methods; bulldozer and sluice plate in use in 1974. Stripping reported in preparation for mining in 1993.

**Production notes:**

Most of the production was apparently from below the junction with Myrtle Creek (Wiseman quadrangle), and any production figures probably reflect that production. Production between 1900 and 1909 said to be worth \$3,000 (gold at \$20 per ounce) (Maddren, 1913).

**Reserves:****Additional comments:**

Many of the references to and descriptions of Slate Creek do not differentiate between the upper creek (in the Chandalar quadrangle) and the lower creek (in the Wiseman quadrangle). Most probably refer to the lower part of the creek, which produced most of the gold.

See also: Myrtle Creek and Slate Creek in the Wiseman quadrangle (see Cobb, 1981, OFR 81-732B, for a list of references for these occurrences in the Wiseman quadrangle).

Alaska Kardex No. 031-26, 031-109 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Schrader, 1900; Schrader, 1904; Maddren, 1910; Maddren, 1913; Reed, 1938; Smith, 1939 (B910 A); Smith, 1939 (B917 A); Smith, 1941; Holdsworth, 1952; Holdsworth, 1955; Brosgé and Reiser, 1964; Heiner and Wolff, 1968; Mulligan, 1974; Cobb, 1976 (OFR 76-340); Cobb, 1977 (OFR 77-168B); Grybeck, 1977; DeYoung, 1978; U.S. Bureau of Mines, 1978; Cobb and Cruz, 1983; Eakins and others, 1985; Maas, 1987 (USBM

OFR 10-87); Bundtzen and others, 1994.

**Primary reference:** Maddren, 1913

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Myrtle Creek****Site type:** Mine**ARDF no.:** CH008**Latitude:** 67.24**Quadrangle:** CH A-6**Longitude:** 149.99**Location description and accuracy:**

Myrtle Creek reportedly has been placer mined for approximately 6 miles above the confluence with Slate Creek. The point of reference is approximately midway along this stretch of creek (NW1/4 sec. 21, T. 28 N., R. 11 W., of the Fairbanks Meridian). Myrtle Creek is a south-flowing tributary to Slate Creek. The mouth of Myrtle Creek is approximately 5 miles southeast of Coldfoot. The lower one-quarter of the creek (about 1 1/2 to 2 miles) is in the Wiseman quadrangle, and the upper three-quarters is in the Chandalar quadrangle about 6 miles east of Coldfoot. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Gold was first discovered on Myrtle Creek in 1899 about 2 1/2 miles above the mouth (Maddren, 1913). The most productive ground was reported to be 2 to 3 miles above the mouth. Gold occurs in the Myrtle Creek drainage in the gravels of the present channel and in bench gravels along the lower 2 to 3 miles of the creek. The present channel was, according to Maddren (1913), 100 to 300 feet wide, although Reed (1938) puts the width at 30 to 150 feet. In general the gold was distributed across the present stream bed. The gravels were generally 2 to 4 feet thick and as much as 7 feet thick. Maddren (1913) described the gold as shot or wheat gold, although he speculated that much of the fine gold was not being recovered at the time. The gold was coarse, clean, and somewhat flattened (like melon seeds); occasional nuggets as much as about 1 oz were found. Smith (1942) reported recovery of a 23-oz nugget. The gold was said to be generally concentrated on bedrock and in crevices of the schist bedrock down to about 3 feet below the gravel/bedrock contact.

Reed (1938) reported active mining in 1937 from both the present channel and from

benches. In at least two locations along the creek, Reed described the gold as having both as a fine and flaky component and coarse and well-worn pieces. At one of these locations, a bench about 2 3/4 miles from the mouth, Reed also noted fine and flaky gold was present all through the gravel and coarser, worn gold (with occasional small nuggets) was on or in the top 3 feet of bedrock. The gravels are generally reported to be slabby schist with varying numbers of greenstone boulders. The bedrock was reported to be graphitic to siliceous schist and slate with at least one observable greenstone dike; this is consistent with later mapping (Brosgé and Reiser, 1964).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes**Site Status:** Not determined**Workings/exploration:**

Mining began on Myrtle Creek in 1899. Mining in the early days was by open cut and later by drifting, principally on the benches. Hydraulic mining was begun in 1909. Nearly all evidence of the early mining had disappeared by 1937. A dragline and bulldozers were in use in the early 1950s. Gravels are thawed near the present channel but frozen near the benches. Gold fineness from three locations along the creek was reported to be about 886 from one location and 914 from the other two (Reed, 1938). Exploration activity was noted in 1984 (Eakins and others, 1985) and development activity as late as 1992 (Swainbank and others, 1993).

**Production notes:**

Myrtle Creek has reportedly been one of the largest placer gold producers in the Koyukuk district. The total production is not known, but production through 1910 was estimated by Maddren (1913) to be \$182,000. Reed (1938) reported that at least \$20,000 was mined in the early days (1900-1910?) from a short section above Kelly's Pup in one summer. Values reported by Reed (1938) ranged from \$1.20 to \$0.35 per square foot of bedrock. The most productive part of the stream was reported by Maddren (1913) to be 2 to 3 miles above Slate Creek at the mountain front. The uppermost claims along the creek (above No. 15) were not profitable at that time. Mining has continued sporadically from 1899 until the present (1998). The most recent production from this property was noted in 1995 (Bundtzen and others, 1996).

**Reserves:**

**Additional comments:**

**References:**

Schrader, 1900; Schrader, 1904; Brooks, 1908; Maddren, 1910; Maddren, 1913; Brooks, 1915; Brooks, 1916; Smith, 1917; Brooks, 1918; Brooks, 1922; Smith, 1930 (B810-A); Smith, 1932; Smith, 1933 (B836-A); Smith, 1936; Smith, 1937; Reed, 1938; Smith, 1938; Smith, 1939 (B910-A); Smith, 1941; Smith, 1942; Roehm, 1949 (IR 31-1); Holdsworth, 1952; Holdsworth, 1955; Brosgé and Reiser, 1964; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Mulligan, 1974; Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; U.S. Bureau of Mines, 1978; Reiser and others, 1979; Cobb and Cruz, 1983; Eakins and others, 1985; Swainbank and others, 1993; Bundtzen and others, 1996.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (near Chekhechunnjik Creek)

**Site type:** Occurrence

**ARDF no.:** CH009

**Latitude:** 67.43

**Quadrangle:** CH B-1

**Longitude:** 147.10

**Location description and accuracy:**

This occurrence is at an elevation of about 2,500 ft approximately 3/4 mile south of Chekhechunnjik Creek (sec. 9, T. 30 N., R. 3 E., of the Fairbanks Meridian ) and 12 1/2 miles southeast of the east end of Ackerman Lake. It is 14 miles northeast of Thazzik Mountain. This site corresponds to unnamed loc. 80 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Ag, Au

**Other:** As

**Ore minerals:**

**Gangue minerals:** Quartz

**Geologic description:**

The brief description of this prospect provided by Brosgé and Reiser (1972) indicates only anomalous gold and silver values in samples from a vein described as a single, thin, arsenic-rich vein in a system of east-west-trending quartz veins. The samples returned values as high as 3.6 ppm Au; Ag values were 1 to 3 ppm. Brosgé and Reiser (1972) also note several additional weakly anomalous rock and soil samples in an area which extends several miles to the southwest of the principal occurrence. The area is mapped as dark gray to black, gray to reddish-brown weathering, quartz-muscovite schist (Brosgé and Reiser, 1964).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Low-sulfide Au-quartz veins(?) (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1972; Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978;  
Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1972

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Middle Fork Chandalar River

**Site type:** Occurrence

**ARDF no.:** CH010

**Latitude:** 67.40

**Quadrangle:** CH B-3

**Longitude:** 148.01

**Location description and accuracy:**

The occurrence is on the Middle Fork Chandalar River approximately 1/2 mile above the mouth of Trilby Creek and about 15 miles southeast of Chandalar (sec. 2, T. 30 N., R. 2 W., of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Reed (1930, MR 31-4, p. 10) reported that in the early days (about 1910), \$6 to \$7 in gold per day was picked up off bedrock cropping out in the stream bed but that no further work had been done up to that time. No other information is available on this occurrence.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1930 (MR 31-4).

**Primary reference:** Reed, 1930 (MR 31-4)

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Trilby Creek****Site type:** Occurrence**ARDF no.:** CH011**Latitude:** 67.41**Quadrangle:** CH B-3**Longitude:** 148.05**Location description and accuracy:**

The reference point is about about 14 miles southeast of Chandalar and 1 mile above the mouth of Trilby Creek (sec. 20, T. 30 N., R. 2 W., of the Fairbanks Meridian); there is no information regarding the exact location of any work or prospecting that may have been done on this creek. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1930, MR 31-4, p. 10) noted that encouraging prospects had been found in the early days (about 1910) but that no mining had occurred and no prospecting was taking place at the time

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1930 (MR 31-4).

**Primary reference:** Reed, 1930 (MR 31-4)

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Agitator Creek****Site type:** Occurrence**ARDF no.:** CH012**Latitude:** 67.32**Quadrangle:** CH B-3**Longitude:** 148.24**Location description and accuracy:**

Agitator Creek is a southeast flowing tributary to the Middle Fork Chandalar River. Its confluence with the Middle Fork is about 14 1/2 miles southeast of Chandalar. The reference point is plotted about 1/4 mile above the mouth (junction of sections 20, 21, 28, and 29, T. 29 N., R. 3 W., of the Fairbanks Meridian); there is no information regarding the exact location of any work or prospecting that may have been done on this creek. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1930, MR 31-4, p. 10) noted that encouraging prospects had reportedly been found in the early days (about 1910) but that no mining had occurred and no prospecting was taking place at the time of Reed's report. No other information is available on this occurrence.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

There is no record of any actual mining activity on this creek.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1930 (MR 31-4).

**Primary reference:** Reed, 1930 (MR 31-4)

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Dictator Creek****Site type:** Mine**ARDF no.:** CH013**Latitude:** 67.35**Quadrangle:** CH B-3**Longitude:** 148.19**Location description and accuracy:**

Dictator Creek is a western tributary of Middle Fork Chandalar River, 13 to 14 miles southeast of Chandalar. The reference point is on the lower portion of the creek approximately 1 mile upstream from the mouth (sec. 10, T. 29 N., R. 3 W., of the Fairbanks Meridian). The actual location of mining along the 5-mile length of this creek is unknown. Two claims staked in 1976 are near the reference point. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Placer mining was reported to have occurred in 1928 and 1933 and prospecting in 1930, but no other information is available (Cobb, 1976, OFR 76-340). The area is mapped as quartz-muscovite schist; a few small outcrop areas of intercalated greenschist are in the hills above the creek (Brosgé and Reiser, 1964).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes

**Site Status:** Inactive

**Workings/exploration:**

Reed (1930) reported a 190-foot shaft that was flooded without reaching bedrock.

**Production notes:**

Heiner and Wolff (1968) reported placer production from 1928 to 1930.

**Reserves:**

**Additional comments:**

Probably only very minor production.

**References:**

Reed, 1930 (MR 31-4); Reed, 1930 (MR 195-13); Smith, 1930 (B813-A); Smith, 1933 (B836-A); Smith, 1934 (B864 A); Heiner and Wolff, 1968; Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Heiner and Wolff, 1968

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (south of Chandalar)

**Site type:** Occurrence

**ARDF no.:** CH014

**Latitude:** 67.42

**Quadrangle:** CH B-3

**Longitude:** 148.46

**Location description and accuracy:**

This site is located approximately 5 1/4 miles south-southeast of Chandalar in a saddle between peaks 4970 and 4607 (SW1/4 sec. 16, T. 30 N., R. 4 W., of the Fairbanks Meridian). This site corresponds to unnamed loc. 81 in DeYoung (1978). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:** Quartz

**Geologic description:**

Brosgé and Reiser (1972, p. 16) noted that gold occurs in quartz veins at this location. The gold occurrence is a sample of a quartz vein containing anomalous gold values in the range of 0.04 to 0.079 ppm Au. The vein sample was taken from an area mapped as Devonian quartz-muscovite schist (Brosgé and Reiser, 1964). No other information is available.

**Alteration:**

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins(?) (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Big Joe Creek [occurrence] (CH015).

**References:**

Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1972

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Big Joe Creek

**Site type:** Occurrence

**ARDF no.:** CH015

**Latitude:** 67.46

**Quadrangle:** CH B-3

**Longitude:** 148.31

**Location description and accuracy:**

The site is located at an elevation of about 3,800 ft approximately 5 3/4 miles southeast of Chandalar near the head of Big Joe Creek, a tributary to Big Creek (sec. 31, T. 31 N., R. 3 W., of the Fairbanks Meridian). The location is approximated from loc. 8 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:** Quartz

**Geologic description:**

The prospect is described only as gold in a quartz vein (Brosgé and Reiser, 1972) in an area mapped as Devonian(?) black, fine-grained quartz-muscovite-chlorite schist with intercalated Devonian(?) green, schistose hornblende diorite and pyroxene diorite sills and andesitic flows(?) (Brosgé and Reiser, 1964). A rock sample from this occurrence contained 0.04 to 0.079 ppm Au. No other descriptive information is available for this occurrence.

**Alteration:**

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins(?) (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a(?)

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

No information available.

**Production notes:****Reserves:****Additional comments:****References:**

Brosgé and Reiser, 1972; DeYoung, 1978; Grybeck, 1977; Dillon, 1982.

**Primary reference:** Brosgé and Reiser, 1972**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Gold King****Site type:** Occurrence**ARDF no.:** CH016**Latitude:** 67.48**Quadrangle:** CH B-3**Longitude:** 148.13**Location description and accuracy:**

The Gold King prospect is located somewhat imprecisely at an elevation of 3,700 ft about 1 1/2 miles northeast of the confluence of Day Creek and Big Creek (sec. 26, T. 31 N., R. 3 W., of the Fairbanks Meridian). The location is accurate within a 2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Little information is available on this property except the description in Heiner and Wolff (1968) that it is a gold quartz property.

**Alteration:****Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins(?) (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a(?)

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

A three-stamp mill was reportedly built in 1910 (Heiner and Wolff, 1968).

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Heiner and Wolff, 1968.

**Primary reference:** Heiner and Wolff, 1968

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (near Squirrel Creek)

**Site type:** Occurrence

**ARDF no.:** CH017

**Latitude:** 67.50

**Quadrangle:** CH B-3

**Longitude:** 148.34

**Location description and accuracy:**

This occurrence is located an an elevation of about 3,000 ft 1 1/2 miles west of Tobin Pass and 4 miles east-southeast of the mouth of Tobin Creek (sec. 24, T. 31 N., R. 4 W., of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

The only information available on this prospect is that 34 lode claims were staked in 1973 (DeYoung, 1978). Its location just south of the Chandalar District gold lodes makes it of some interest.

**Alteration:**

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins(?) (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Grybeck, 1977; DeYoung, 1978; Dillon, 1982.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (near Horse Creek)

**Site type:** Occurrence

**ARDF no.:** CH018

**Latitude:** 67.40

**Quadrangle:** CH B-4

**Longitude:** 148.97

**Location description and accuracy:**

This site is at an elevation of about 4,000 ft approximately 10 miles southwest of the west end of Chandalar Lake and west of the head of Horse Creek (sec. 30, T. 30 N., R. 6 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Copper sulfides and/or malachite/azurite

**Gangue minerals:**

**Geologic description:**

The occurrence is described only as copper sulfides and/or malachite-azurite stains (Brosgé and Reiser, 1964). Bedrock is Devonian quartz-mica schist with intercalated greenschist and greenstone (Brosgé and Reiser, 1964).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Berg and Cobb, 1967; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Dennys Gulch; O'Keefe

**Site type:** Mine

**ARDF no.:** CH019

**Latitude:** 67.40

**Quadrangle:** CH B-5

**Longitude:** 149.14

**Location description and accuracy:**

This property is at an elevation of about 3,400 ft on the northeast side of the O'Keefe Hills (SE1/4 sec. 29, T. 30 N., R. 7 W., of the Fairbanks Meridian); it is approximately 18 1/2 miles southwest of Chandalar. The reference point coincides with the mine symbol on Dennys Gulch shown on the topographic map. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

This area was not described by early workers, which suggests that the discovery of placer gold was considerably later than that in many other parts of the district. There are reports of active placer mining on this creek as late as the 1960s but little information after that. Heiner and Wolff (1968) reported that placer gold has been mined from gravels that range in thickness from 6 to 70 ft and that coarse nuggets (valued at as much as \$100) have been recovered, although no pay streak was delineated. Bedrock is mapped as quartz-muscovite schist that is highly deformed and cut by many thin quartz veins that contain pyrite (Freeman, 1963).

Brosgé and Reiser (1964) noted 50 ppm Pb in a stream sediment sample from this location. Anomalous radioactivity has been observed at the O'Keefe placer claim near the map site.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes

**Site Status:** Not determined

**Workings/exploration:**

Placer mining reported as late as 1964 (Brosgé and Reiser, 1964), and six lode gold claims were located in 1955 (Heiner and Wolff, 1968).

**Production notes:****Reserves:****Additional comments:**

See also: Sawlog Creek (CH020).

Alaska Kardex No. KX-031-11 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Anderson, 1944; Holdsworth, 1952; Holdsworth, 1955; Williams, 1952; Freeman, 1963; Brosgé and Reiser, 1964; Heiner and Wolff, 1968; Eakins, 1969; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); Cobb, 1977 (OFR 77-168B); Maas, 1987 (USBM OFR 10-87); DeYoung, 1978.

**Primary reference:** Freeman, 1963

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Sawlog Creek

**Site type:** Mine

**ARDF no.:** CH020

**Latitude:** 67.40

**Quadrangle:** CH B-5

**Longitude:** 149.15

**Location description and accuracy:**

Sawlog Creek is a small headwater tributary to the South Fork Koyukuk River. The mine site (as shown in Brosgé and Reiser, 1964) is approximately 3 miles southeast of South Fork Lake and about 1 mile upstream from where Sawlog Creek enters the valley of the South Fork Flats (sec. 29, T. 30 N., R. 7 W., of the Fairbanks Meridian). It is just north of the low pass that separates Sawlog Creek from Dennys Gulch. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Brosgé and Reiser (1964) reported recent placer mining in 1964, but there is no other information regarding this placer occurrence. The area is mapped as quartz-mica schist with intercalated greenschist and greenstone. Sawlog Creek heads against Dennys Gulch (CH019), in which there is documented placer activity, and both creeks are just south of the southern end of the Baby Creek batholith (DeYoung, 1978).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Not determined

**Workings/exploration:**

Williams (1952) reported that the results of a magnetometer survey on Sawlog Creek looking for a pay streak were generally inconclusive, but because the survey was performed at the request of the property owners it suggests some activity at that time. Heiner and Wolff (1968) reported one claim located in 1960.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Williams, 1952; Brosgé and Reiser, 1964; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Cobb, 1977 (OFR 77-168B); DeYoung, 1978; Dillon, 1982.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** King Creek

**Site type:** Occurrence

**ARDF no.:** CH021

**Latitude:** 67.46

**Quadrangle:** CH B-5

**Longitude:** 149.30

**Location description and accuracy:**

This site is approximately 1 1/2 miles south of the east end of Bob Johnson Lake (formerly Big Lake). The exact location along King Creek is indefinite; the reference point is the same as that for loc. 37 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

There is little descriptive information on this occurrence. Reed (1938) reported prospecting which reportedly found only small amounts of gold in a 70- to 75-foot shaft. A second shaft about 600 feet farther downstream from the first shaft reportedly found nothing.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

Prospecting included at least two shafts. There are no further reports of mining.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1938; Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Butte Creek (Shamrock Creek)****Site type:** Prospect**ARDF no.:** CH022**Latitude:** 67.48**Quadrangle:** CH B-5**Longitude:** 149.37**Location description and accuracy:**

Butte Creek (Shamrock Creek on the modern topographic map) is a short, (1 1/2-mile-long), north-flowing stream which drains into Bob Johnson Lake (formerly Big Lake). The map site is on the lower reaches of the creek (sec. 29, T. 31 N., R. 8 W., of the Fairbanks Meridian) although no specific location of the mining activity along the creek is recorded. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1938) reported that the creek was being actively prospected in 1937 and that fair prospects had been found. There is no further description of this placer.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined**Site Status:** Inactive

**Workings/exploration:**

Prospecting reported in the 1930s. There is no evidence of further activity.

**Production notes:****Reserves:****Additional comments:**

Shamrock Creek is the modern name of Butte Creek and is the name found on current maps.

**References:**

Reed, 1938; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): California Creek****Site type:** Mine**ARDF no.:** CH023**Latitude:** 67.47**Quadrangle:** CH B-5**Longitude:** 149.49**Location description and accuracy:**

The reference point for this occurrence is at the confluence of California Creek with Jim Pup (sec. 35, T. 31 N., R. 9 W., of the Fairbanks Meridian); it is approximately 2 1/4 miles southwest of Bob Johnson Lake (formerly Big Lake). Mining was reported to be at and below the confluence with Jim Pup. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Mining on California Creek was reported to be principally from the area below its confluence with Jim Pup (Reed, 1938). Although the evidence is inconclusive, most mining probably was within 3/4 mile of the confluence. Mining in the present creek channel was in gravels 2 to 5 ft thick. Efforts to explore what was probably a deeper channel, about 15 to 20 feet deep, met with little success. The close spatial relationship among California, Jim Pup (CH024), and Wakeup Creek (CH025) suggests that California Creek may have the same complex of present, deep, and high channels as the other two producing creeks in this area, but there is no description of any mining of high channels. Reed (1938) suggested that the lower reaches of California Creek deserve more prospecting, but there is no record of any further effort along the lower creek.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small**Site Status:** Not determined**Workings/exploration:**

As of the 1930s there had been open-cut workings in the present channel and a number of shafts about 18 ft deep exploring a deeper channel (Reed, 1938).

**Production notes:**

Gold was discovered in 1901 and reportedly \$4,000 worth was mined from 1901 to 1909 (Maddren, 1913). Although mining and/or prospecting probably continued intermittently until around 1931, there were no reports of mining and prospecting until Swainbank and others (1991) reported production from Jim Pup and California Creek in 1990. From this report it can be inferred that there has been other unreported mining activity on the creek since the increase in the price of gold in the early 1970s.

**Reserves:****Additional comments:**

See also Jim Pup (Jim Pup Creek, Jim Gulch, Jim Creek) (CH024) and Wakeup Creek (CH025).

**References:**

Schrader, 1904; Maddren, 1910; Maddren, 1913; Brooks, 1918; Smith, 1932; Reed, 1938; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983; Swainbank and others, 1991.

**Primary reference:** Maddren, 1913**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Jim Pup; Jim Pup Creek; Jim Gulch; Jim Creek**

**Site type:** Mine

**ARDF no.:** CH024

**Latitude:** 67.47

**Quadrangle:** CH B-5

**Longitude:** 149.48

**Location description and accuracy:**

Jim Pup is a tributary to California Creek approximately 2 miles southwest of Bob Johnson Lake (formerly Big Lake) (NE1/4 sec. 35 and sec. 36, T. 31 N., R. 9 W., of the Fairbanks Meridian). Although the prospect is variously named Jim Gulch, Jim Pup Creek, or Jim Creek, the creek is named Jim Pup on the current 1:63,360-scale topographic map. The placer workings extend 3/4 mile above the confluence of Jim Pup with Wakeup Creek. The location is accurate within a 1/4-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Jim Pup was reported by Reed (1938, p. 34-36) to have a high channel and a deep channel in addition to the present channel. Reed (1938) described gold occurrences in the present and deep channels, but he made no note of gold being taken from the high channel. The present channel was worked beginning in the early 1900s, and the gold from this channel was said to be very coarse; a \$50 nugget was recovered from workings in the early days (Reed, 1938). The pay streak worked in the early days was about 10 feet wide, and the depth to bedrock was said to be 3 to 5 feet. The deep channel on Jim Pup is considered to be a continuation of the one on nearby Wakeup Creek (CH025) and appears to generally extend downstream from the mouth of Wakeup Creek along the right limit of Jim Pup. Near the confluence of Jim Pup and Wakeup Creek the deep channel is about 55 feet deep and said to be thawed but dry (Reed, 1938). There were also reports of an 'upper' deep channel running on false bedrock on lower Wakeup Creek that extends to the confluence with Jim Pup, where it was said to be about 12 feet below the surface (Reed, 1938). It was thought that this upper deep channel might extend along the right limit of Jim Pup. There is a close spatial relationship among California, Jim Pup and Wakeup creeks, and their descriptions are commonly intermixed.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Not determined

**Workings/exploration:**

Mining and prospecting included surface and underground drift mining sporadically through the years from the early 1900s until the 1950s. There are reports of production in the 1980s and early 1990s, but there is no other information on this later activity.

**Production notes:**

Gold was discovered in 1901, and production during the period 1900-1909 reported to be worth \$3,000 (Maddren, 1913). Mining during those years was said to be small scale and to pay no better than wages. Mining was also reported in 1934 and 1938. Heiner and Wolff (1968) reported that the property was worked by hand methods into the 1940s and that work continued into the 1950s. Production was also noted in 1989 and 1990 (Bundtzen and others, 1990; Swainbank and others, 1991).

**Reserves:****Additional comments:**

See also: California Creek (CH023) and Wakeup Creek (CH025).

**References:**

Maddren, 1910; Maddren, 1913; Wimmeler, 1925; Smith, 1933 (B844-A); Smith, 1936; Reed, 1938; Smith, 1939 (B917-A); Holdsworth, 1952; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983; Bundtzen and others, 1990; Swainbank and others, 1991.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Wakeup Creek****Site type:** Mine**ARDF no.:** CH025**Latitude:** 67.48**Quadrangle:** CH B-5**Longitude:** 149.48**Location description and accuracy:**

Wakeup Creek is a small tributary of Jim Pup approximately 1 1/2 to 2 miles southwest of Bob Johnson Lake (formerly Big Lake). The site is across a low pass at the head of Lake Creek (sec. 26, T. 31 N., R. 9 W., of the Fairbanks Meridian). Mining has occurred for approximately 1,500 feet upstream from the mouth of Wakeup Creek. The location is accurate within a 1/4-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Wakeup Creek has placer gold at three creek levels (Reed, 1938). The present channel lies on older gravel fill and does not cut bedrock. Minor gold was produced from these surface gravels in the early days (about 1910), but the gravels have since been covered by tailings from later mining. A deep channel, which is a continuation of the deep channel on Jim Pup (CH024), is also present and has been mined for about 1,500 feet upstream from the confluence of Jim Pup and Wakeup Creek. It is about 55 feet deep at this confluence and deepens to 112 feet 1,500 feet upstream. The deep channel is incised into hard, smooth, schist bedrock with five or six gutters, 2 to 4 feet deep along its bottom and has 5 feet of gravel lying on top of the bedrock. The channel is about 25 feet wide at its lower end and narrows upstream to 15 to 20 feet. The gold is generally on the high points of the bedrock between the gutters but in places is also distributed throughout the gravel. The gold is fine but rather rough with only a few larger pieces; values run from \$3.50 to \$4.00 per bedrock foot (at \$35 per ounce of gold). The high channel on Wakeup Creek appears to be a former channel of Jim Pup, which ran toward Bob Johnson Lake (formerly Big lake), the reverse of the present drainage. The depth to bedrock in this channel is about 20 feet where it had been opened up in 1937; although no gold had been produced from this channel as of 1937, it was said to run about \$0.50 per square foot of bedrock (Reed,

1938).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Not determined

**Workings/exploration:**

Surface and underground workings. Drift mining of the deep channel in the 1930s.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Jim Pup (CH024).

**References:**

Smith, 1930 (B810-A); Smith, 1937; Reed, 1938; Smith, 1938; Smith, 1939 (B917-A); Roehm, 1949; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Lake Creek****Site type:** Mine**ARDF no.:** CH026**Latitude:** 67.50**Quadrangle:** CH B-5**Longitude:** 149.45**Location description and accuracy:**

This placer deposit is located along the south shore of Bob Johnson Lake (formerly Big Lake). The reference point is the present channel deposit (sec. 24, T. 31 N., R. 9 W., of the Fairbanks Meridian). A buried channel deposit was mined just below the small lake at the head of Lake Creek. The location is accurate within a 1/4-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Lake Creek is reported to have a deep channel as well as the present channel (Reed, 1938). Mining has occurred both in the present channel near the mouth of the stream (location of reference point) and on the deep channel near the head of the creek. This creek heads against Wakeup Creek (CH025), another productive creek in the area, and the deep channel may be an extension of the Wakeup Creek high channel on the other side of the divide.

When Reed (1938, p. 38-40) visited the creek in 1937, the present stream had been worked from about 300 feet south of its mouth at Bob Johnson (Big) Lake to 1,500 ft south of the lakeshore. The stream in this area was 10 to 20 ft wide and the gravel was 9 to 12 ft deep. The gravels are reported to be coarse schist 'slide' rock mixed with fine sand and coarse waterworn gravel (Reed, 1938). The gold recovered from the present channel reportedly is all coarse. The values obtained were about \$0.50 per square foot of bedrock and the gold's fineness was reported to be 906.

Work on the old buried channel started in 1930 near the upper end of the creek. The depth to bedrock was 30 to 40 feet; 20 feet of this was a blue-gray mud and the rest gravel. The gold was finer than that recovered from the present channel workings and was on and in the upper 1 ft of bedrock. The bedrock was described as almost flat-lying gray schist (Reed, 1938). The gravel is coarse and waterworn with numerous erratic boulders

and noticeable quantities of quartz.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Not determined

**Workings/exploration:**

Surface mining on the present channel has been by ground sluicing and shoveling in open cuts (Reed, 1938). The deep channel was worked by drift mining. Two 38.5-ft shafts located the buried deep channel 150 to 180 feet north of the open-cut workings of the deep channel. One 76-foot shaft and one 40-foot shaft, 500 to 1000 feet from the open-cut workings on the deep channel, did not intersect that channel. Exploration activity on this creek was reported as late as 1990, but there were no details given.

**Production notes:**

Gold was discovered in 1915 (Reed, 1938) and production noted as late as 1985 (Bundtzen and others, 1986).

**Reserves:**

**Additional comments:**

See also: Wakeup Creek (CH025). Alaska Kardex No. KX-031-9 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Wimmler, 1925; Smith, 1930 (B810-A); Smith, 1932; Smith, 1936; Reed, 1938; Roehm, 1949 (IR 31-1); Holdsworth, 1952; Holdsworth, 1955; Brosgé and Reiser, 1964; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983; Bundtzen and others, 1986; Maas, 1987 (USBM OFR 10-87); Swainbank and others, 1991.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Bore Creek; Boer Gulch; Boer Creek; Boar Creek

**Site type:** Prospect

**ARDF no.:** CH027

**Latitude:** 67.46

**Quadrangle:** CH B-6

**Longitude:** 149.56

**Location description and accuracy:**

The site is located approximately 5 miles southwest of Bob Johnson Lake (formerly Big Lake) in the S1/2 sec. 33, T. 31 N., R. 9 W., of the Fairbanks Meridian. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Madden (1913, p. 107-108) reported small-scale mining operations dating back to 1901 at this site. Gold recoveries were said to be poor, earning only enough to cover wages. Reed (1938) found no evidence of mining, and local miners reported prospecting efforts had never located payable quantities of gold. Bedrock in the area is mapped as calcareous schist (Brosge and Reiser, 1964).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Explored by several prospect shafts sunk in early 1900s, which apparently failed to find pay.

**Production notes:**

**Reserves:**

**Additional comments:**

Au is probably present but in subeconomic amount.

**References:**

Maddren, 1910; Maddren, 1913; Reed, 1938; Heiner and Wolff, 1968; Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); Cobb and Cruz, 1983; DeYoung, 1978.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Little Gold Creek****Site type:** Occurrence**ARDF no.:** CH028**Latitude:** 67.50**Quadrangle:** CH B-6**Longitude:** 149.65**Location description and accuracy:**

Little Gold Creek is described by Reed (1938) as a small westward-flowing, right-limit tributary to Gold Creek that heads against Eden Creek. The prospect is about 3 miles southwest of Glacier Lake and near the mouth of Little Gold Creek (NE1/4 sec. 19, T. 31 N., R. 9 W., of the Fairbanks Meridian). While neither Little Gold or Eden Creeks are shown by name on current topographic maps, the descriptions of each provided by Reed are sufficient to reasonably conclude that the location given here is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Little Gold Creek is a small tributary to upper Gold Creek, one of the most prolific producers in the district. Reed (1938, p. 27-28) reported that a 76-foot shaft to bedrock was sunk about 200 feet from the mouth of Little Gold Creek, and although some gold was found, it was not in amounts sufficient to be workable. No other descriptive information is available on this occurrence.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

A 76-foot prospect shaft was sunk to bedrock near the mouth of the creek.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1938; Cobb, 1976 (OFR 76-340); DeYoung, 1978.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Sheep Creek; Sheep Gulch****Site type:** Mine**ARDF no.:** CH029**Latitude:** 67.50**Quadrangle:** CH B-6**Longitude:** 149.81**Location description and accuracy:**

Sheep Creek drains the northwest flank of Poss Mountain and is a west-northwest-flowing tributary to Middle Fork Koyukuk River. The reference point is the mine symbol on the topographic map; it is approximately 1 1/2 miles above the mouth of the creek and 3 1/2 miles north-northeast of Minnie Creek Lake (sec. 21, T. 31 N., R. 10 W., of the Fairbanks Meridian). Placer mining has probably extended approximately 1/2 mile downstream and 1 mile or more upstream from the reference point. The location is accurate within a 1/2-mile.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1938, p. 28-29) reported that the Sheep Creek placers are in both the present channel and a deep channel. The bench placers were discovered along the right limit of the present stream in about 1910 and were mined for a distance of approximately 7,000 feet upstream from the point where Sheep Creek valley opens into the Middle Fork valley. Above this point the channel grades into the present stream channel. At the lower end the depth to the deep channel was approximately 90 feet. There was little evidence of large boulders in the tailings from the mining of the deep channel. Values from the deep channel ran about \$1 per square foot of bedrock (1937), but some small areas had much higher values. One of those areas returned \$800 (1908) from 200 square feet. The deep channel probably extends some distance into Middle Fork valley but may have been cut off, as was the deep channel of Gold Creek just to the north (CH080).

Reed (1938) implied that mining had only just begun in the present channel about 1,000 feet above where Sheep Creek valley entered the valley of the Middle Fork. The depth to the schist bedrock there was about 6 ft, and the gravel was very coarse with many large schist boulders. The gold was said to be very coarse and water worn. Preliminary esti-

mates of the values in the present channel in 1937 were about \$0.50 per square foot of bedrock. Reed (1938) described the bedrock of Sheep Creek as schist. More recent mapping shows the area to be underlain by Devonian black slate, phyllite and phyllitic siltstone, chloritic siltstone and grit, and quartz-muscovite schist (Brosgé and Reiser, 1964).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Placer was worked by surface mining of the present channel and underground drift mining of the deep channel.

**Production notes:**

Production reported sporadically from the early 1900s through the early 1960s. Total value of production is unknown, but from 1900 to 1909, \$2,000 worth of gold reportedly was produced (Maddren, 1913).

**Reserves:****Additional comments:**

Alaska Kardex No. 031-029 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Maddren, 1910; Brooks, 1911; Brooks, 1912; Maddren, 1913; Smith, 1936; Smith, 1937; Reed, 1938; Smith, 1938; Roehm, 1949 (IR 31-1); Brosgé and Reiser, 1964; Heiner and Wolff, 1968; Mulligan, 1974; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Nugget Creek****Site type:** Prospect**ARDF no.:** CH030**Latitude:** 67.48**Quadrangle:** CH B-6**Longitude:** 149.86**Location description and accuracy:**

Nugget Creek heads into the northwest flank of Poss Mountain and flows northwest to the Middle Fork Koyukuk River. Its confluence with the Middle Fork is approximately 3 miles north of Minnie Creek Lake. The precise location of this prospect is unknown. The reference point is plotted near where the creek enters the Middle Fork valley (sec. 30, T. 31 N., R. 10 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1938, p. 30) reported that fair prospects had been found on Nugget Creek although very little mining had been done. He speculated that the creek might be developed in time into an economic mine. Mapping shows the creek to drain an area of Devonian quartz-muscovite schist and chloritic siltstone and grit (Brosgé and Reiser, 1964). No other information is available.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Prospecting.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1938; Mulligan, 1974; Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Rainbow Gulch; Rainbow Creek****Site type:** Occurrence**ARDF no.:** CH031**Latitude:** 67.47**Quadrangle:** CH B-6**Longitude:** 149.95**Location description and accuracy:**

Rainbow Gulch is a north- and west-flowing tributary to the Middle Fork Koyukuk River and is located 2 to 3 miles northwest of Minnie Creek Lake. Reed (1938) described Rainbow Creek as running a little north of west, which would coincide with the lower part of the creek. The reference point for the prospects on this creek thus has been plotted near a cabin shown on the topographic map on the lower part of the creek (sec. 35, T. 31 N., R. 11 W., of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1938, p. 30) reported that the creek had good prospects and speculated that the creek would be a producer, given improved freight rates to the area. Mapping shows the creek to drain an area underlain predominantly by Devonian siltstone and grit (Brosgé and Reiser, 1964). No other information is available

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1938; Mulligan, 1974; Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Neck Creek; Coon Gulch****Site type:** Occurrence**ARDF no.:** CH032**Latitude:** 67.47**Quadrangle:** CH B-6**Longitude:** 150.00**Location description and accuracy:**

The location of Neck Creek is imprecise; it probably is the same as Coon Gulch, shown on modern maps, which is located approximately 4 miles west northwest of Minnie Creek Lake. Reed (1938) described the location of this creek as a left-limit tributary of the Middle Fork Koyukuk River that empties into the Middle Fork about 1/4 mile above the mouth of the Hammond River. The prospect may actually be in the Wiseman quadrangle west of the Chandalar quadrangle, but the reference point has been plotted in the Chandalar quadrangle near the western limit of Coon Gulch (SE1/4 sec. 33, T. 31 N., R. 11 W., of the Fairbanks Meridian). The location is accurate within a 2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

The only description of this occurrence indicates that prospecting in the early days, about 1910 produced very good results but that as of 1937 no one had worked on the creek since then (Reed, 1938). No other information is available.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Prospecting only.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1938; Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Minnie Creek****Site type:** Prospect**ARDF no.:** CH033**Latitude:** 67.42**Quadrangle:** CH B-6**Longitude:** 149.89**Location description and accuracy:**

The prospect is approximately 2 miles south of Minnie Creek Lake. The reference point is at the junction of the tributary from Minnie Creek Lake and Minnie Creek (sec. 13, T. 30 N., R. 11 W., of the Fairbanks Meridian). This point is near the upper end of an area of placer activity extending downstream to the confluence of Minnie Creek and Howard Creek. A smaller stretch along Minnie Creek about 2.5 to 3 miles upstream from the reference point (sec. 21, T. 30 N., R. 11 W., of the Fairbanks Meridian) has also been placered. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Minnie Creek was said to have been heavily prospected in the early 1900s, but water problems made reaching bedrock difficult and the early mining was not very successful (Reed, 1938). A shaft to bedrock in 1904 reportedly produced \$500 of heavy 'shot' gold from a short drift before it was flooded. Drift mining was concentrated in a deep channel, although some gold was taken out at higher levels. No prospects were reported on the present channel or on a high channel, although several high benches indicate the presence of a high channel.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes**Site Status:** Inactive**Workings/exploration:**

Considerable prospecting and some drifting were reported in the early 1900s, but water on bedrock made prospecting and drift mining difficult.

**Production notes:**

\$1000 worth of gold reportedly produced by 1909.

**Reserves:****Additional comments:****References:**

Reed, 1938; Heiner and Wolff, 1968; U.S. Bureau of Mines, 1973; Dillon, 1982.

**Primary reference:** Reed, 1938**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Howard Creek****Site type:** Occurrence**ARDF no.:** CH034**Latitude:** 67.38**Quadrangle:** CH B-6**Longitude:** 149.91**Location description and accuracy:**

This site is at an elevation of about 4,800 ft, approximately 5 miles south-southwest of Minnie Creek Lake and a mile east of the head of Howard Creek (sec. 36, T. 30 N., R. 11 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Cu, Pb**Other:** Ni**Ore minerals:** Chalcopyrite, galena, pyrrhotite**Gangue minerals:** Quartz**Geologic description:**

This occurrence consists of widely but very sparsely distributed cherry-sized pods of quartz and pyrrhotite with traces of galena and chalcopyrite in chloritic schists (Mulligan, 1974). Goethite stains are found around these pods. Pyrite veinlets which occur along joints and fractures in the schist contain trace amounts of copper. Bedrock near the occurrence is mapped (Dillon and Reifentuhl, 1995) as Lower Paleozoic to Proterozoic, interbanded quartzite and graphitic albite-chlorite-muscovite-quartz schist near a contact with Lower Paleozoic to Proterozoic calcareous schist and marble. Mulligan (1974) described the host rocks as chloritic schists with quartz, muscovite, garnet, ankerite-magnesite, and graphite.

**Alteration:**

Oxidized Fe sulfides.

**Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

This location was noted by Brosgé and Reiser (1964) as an occurrence of metallic minerals that contained Cu and Ni. The Ni content was determined by X-ray analysis.

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Mulligan, 1974; Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; U.S. Bureau of Mines, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Marion Creek; Marian Creek

**Site type:** Prospect

**ARDF no.:** CH035

**Latitude:** 67.34

**Quadrangle:** CH B-6

**Longitude:** 149.95

**Location description and accuracy:**

Marion Creek is a large, west-flowing tributary to the Middle Fork Koyukuk River approximately 13 miles south of Sukakpak Mountain and approximately equidistant between Minnie Creek to the north and Myrtle Creek to the south. The reference point is near a prospect described by Maddren (1913) as a shaft '6 or 7 miles above the mouth' (SW1/4 sec. 14, T. 29 N., R. 11 W., of the Fairbanks Meridian); the location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Maddren (1913) reported gold colors near the surface in valley gravels of Marion Creek. Initial attempts to sink shafts in the gravels of this creek proved unsuccessful, but in the winter of 1908-09 miners succeeded in sinking a shaft 26 feet to bedrock 6 or 7 miles above the mouth of the creek, where good prospects were said to have been found. According to Reed (1938) considerable prospecting was done in the 'early days,' but the gold that was found was insufficient to warrant mining. Maddren (1913), however, reported \$1,000 worth of production between 1900 and 1909.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small**Site Status:** Inactive**Workings/exploration:**

Considerable prospecting along the creek including at least one 26-foot shaft to bed-rock.

**Production notes:**

Maddren (1913) reported \$1,000 worth of production between 1900 and 1909.

**Reserves:****Additional comments:**

Alaska Kardex No. KX-031-172, 031-173, 031-200, 031-201, 031-265 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Schrader, 1900; Maddren, 1910; Maddren, 1913; Reed, 1938; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Maddren, 1913**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s):** Unnamed (south of the north fork of the East Fork Chandalar River)

**Site type:** Occurrence

**ARDF no.:** CH036

**Latitude:** 67.68

**Quadrangle:** CH C-1

**Longitude:** 147.05

**Location description and accuracy:**

This occurrence is at an elevation of about 3,200 ft, approximately 15 miles northeast of the east end of Ackerman Lake and 3 miles south of the north fork of the East Fork Chandalar River near the eastern boundary of the Chandalar quadrangle (secs. 15 and 22, T. 33 N., R. 3 W., of the Fairbanks Meridian). The reference point is near the center of a large northeast-southwest-trending claim block which extends 2 to 3 miles in both directions from the reference point. This occurrence is listed in DeYoung (1978) as North Fork East Fork Chandalar River (loc. 52) and in Maas (1987, OFR 10-87 (location 29) as Chandalar River NFEF. See additional comments for further information. The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Cu, Zn

**Other:**

**Ore minerals:**

**Gangue minerals:**

**Geologic description:**

There is little descriptive information on this occurrence. DeYoung (1978) described the occurrence as a stratabound(?) Cu-Zn prospect, and Barker (1978, loc. 11) reported that copper values appear to be related to Upper Devonian black metaclastic rocks adjacent to, or under, a thrust unit of Skajit Limestone. Geologic mapping shows the area to be underlain principally by Devonian(?) Hunt Fork Shale black slate, phyllite, and phyllitic siltstone, Devonian limestone and siltstone, and a thrust slice of the Skajit Limestone (Brosge and Reiser, 1964). A basal conglomerate(?) of the Hunt Fork Shale has been mapped locally in the area.

**Alteration:**

**Age of mineralization:**

**Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Barker (1978) reported 202 claims located in 1975 (ACH and CHA groups), accompanied by exploration that included drilling, which was continuing in 1978. DeYoung (1978) reports 118 claims staked in 1976. Ninety-three are in the Chandalar quadrangle; the remaining 25 extend east into the Christian quadrangle.

**Production notes:****Reserves:****Additional comments:**

Little information is available about this site. Location 11 in Barker (1978) is on a very small scale map, but it is reasonably coincident with loc. 52 on DeYoung's (1978) map. The locations herein are considered equivalent. The claim block outline is shown on U.S. Bureau of Mines (1973) mineral location overlay. It also corresponds to location 29 on their later version of the mineral location overlay (Maas, 1987, USBM OFR 10-87).

Alaska Kardex No. 031-070 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

U.S. Bureau of Mines, 1973; Barker, 1978; DeYoung, 1978; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Barker, 1978**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Rock Creek****Site type:** Occurrence**ARDF no.:** CH037**Latitude:** 67.54**Quadrangle:** CH C-2**Longitude:** 147.91**Location description and accuracy:**

Rock Creek is a tributary to the Middle Fork Chandalar River. Its confluence with the Middle Fork is about 5 1/2 miles west-southwest of the west end of Ackerman Lake. Rock Creek heads against the head of Day Creek, a tributary to Big Creek. The reference point is plotted several miles upstream from the mouth of Rock Creek (sec. 2, T. 31 N., R. 2 W., of the Fairbanks Meridian), but the exact location of any prospecting that may have been done on this creek is not known. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1930, MR 31-4, p. 10) noted that encouraging prospects had been found in the early 1900s but that no mining had occurred and no prospecting was taking place at the time of his investigation. The area of Rock Creek is mapped as quartz-muscovite schist (Brosgé and Reiser, 1964). No other information is available.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1930 (MR 31-4).

**Primary reference:** Reed, 1930, (MR 31-4)

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Slate Creek (tributary to Grave Creek)

**Site type:** Occurrence

**ARDF no.:** CH038

**Latitude:** 67.59

**Quadrangle:** CH C-2

**Longitude:** 147.98

**Location description and accuracy:**

The reference point for the occurrence is on the lower reaches of Slate Creek, a south-flowing tributary to Grave Creek, about 5 1/2 miles east of the east end of Squaw Lake (SW1/4 sec. 15, T. 32 N., R. 2 W., of the Fairbanks Meridian) . There is no information on the exact location of the occurrence along Slate Creek.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Reed (1930, MR 31-4, p. 11) reported that very encouraging prospects had reportedly been found on Slate Creek in the early 1900s. No other information is available. The creek drains an area mapped as Devonian black slate, phyllite and phyllitic siltstone, and muscovite schist and chloritized amphibole schist (Brosgé and Reiser, 1964).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Not determined

**Workings/exploration:**

Three(?) claims were located on the creek, but there is no description of any work which may have been done.

**Production notes:**

**Reserves:**

**Additional comments:**

Alaska Kardex No. 031-094 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Reed, 1930 (MR 31-4); Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Reed, 1930, (MR 31-4)

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Little Squaw Creek****Site type:** Mine**ARDF no.:** CH039**Latitude:** 67.57**Quadrangle:** CH C-3**Longitude:** 148.16**Location description and accuracy:**

The Little Squaw Creek placer mine is approximately 2 miles southeast of the southeast end of Squaw Lake. Placer mining has taken place on the lower portion of the creek, generally in the SW1/4 sec. 26, T. 32 N., R. 3 W., of the Fairbanks Meridian, and as shown on fig. 2 in Chipp (1970). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:** As, Pb, W**Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Little Squaw Creek drains an area of auriferous quartz veins of the Chandalar district (CH040 through CH042) that are the presumed source of the placer gold. Mertie (1925, p. 254-259, 263) described the complex glacial history for the creek. The creek was dammed by ice in the North Fork Chandalar River valley during part of Pleistocene, and this damming resulted in both pre- and post-glacial channel and bench deposits along Little Squaw Creek. The creek and bench gravels are mixed, with no distinct boundaries. The upper part of the drainage is described as having gold on bedrock, while farther downstream the pay streak runs onto false bedrock in glacial gravels (Mertie, 1925). Post-glacial deposits, mainly along the lower course of the stream, are composed of 25 to 50 ft of glacial till overlain by 55 to 100 ft of gravel. The pre-glacial deposits, mainly along the upper stream course, are about 35 ft deep, with coarse gold in the upper 2 to 3 ft of bedrock. The placer concentrates contain, in addition to gold, a variety of other minerals, including pyrite, hematite, arsenopyrite, scheelite, galena, and monazite.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Not determined

**Workings/exploration:**

Surface and underground workings. Mostly small-scale drift mining in the old channels. Gold was discovered on Little Squaw Creek in 1905, and mining was reported in most years through 1940, with further activity noted as late as the mid-1980s. In 1983, bulk sampling indicated average grades of \$11 to \$16 per cubic yard (gold at \$400 per ounce) (Alaska Construction and Oil, 1984). Average fineness of the gold was reported as 848 (Mertie, 1925, p. 258).

**Production notes:**

Significant production but exact figures are unavailable.

**Reserves:**

Alaska Construction and Oil (1984) reported that Canadian Barranca Ltd., Inc., the operator in 1984, considered placer reserves in Tobin Creek, Little Squaw Creek, and two additional unnamed creeks in the area to be at least 100,000 ounces with potential for as much as 500,000 ounces.

**Additional comments:**

See also: Big Creek (CH043), Tobin Creek (CH048), Mikado Mine (CH045), Little Squaw Mine (CH040). Placer concentrates contain 0.002 to 0.003 percent eU (White, 1952).

**References:**

Brooks, 1915; Brooks, 1916 (B642-A); Brooks, 1918; Brooks, 1922; Brooks, 1923; Brooks and Capps, 1924; Mertie, 1925; Thompson, 1925; Wimmeler, 1925; Smith, 1926; Reed, 1929; Smith, 1929; Reed, 1930 (MR 31-4); Reed, 1930 (MR 195-13); Smith, 1930 (B813-A); Smith, 1932; Smith, 1933 (B836); Smith, 1933 (B844-A); Smith, 1934 (B857-A); Smith, 1934 (B864-A); Smith, 1936; Smith, 1937; Smith, 1938; Smith, 1939 (B910-A); Smith, 1939 (B917-A); Smith, 1941; Smith, 1942; Roehm, 1949 (RI 31-2); Glover, 19??; White, 1952; Nelson and others, 1954; Overstreet, 1967; Heiner and Wolff, 1968; Chipp, 1970; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Eakins and Forbes, 1976; Cobb, 1976 (OFR 76-340); Cobb, 1977 (OFR 77-168B); Grybeck, 1977; DeYoung, 1978; Grybeck and DeYoung, 1978; Dillon, 1982; Alaska Construction and Oil, 1984; Eakins and others, 1985; Bundtzen and others, 1987; Swainbank and others, 1991; Swainbank and others, 1993; Nokleberg and others, 1996; Swainbank and oth-

ers, 1997.

**Primary reference:** Mertie, 1925

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Little Squaw (Cosine; Sine; Crystal; Big Squaw Quartz; Parabola; Engineers Exploration Syndicate; Idaho-Alaska Corp.)

**Site type:** Mine

**ARDF no.:** CH040

**Latitude:** 67.56

**Quadrangle:** CH C-3

**Longitude:** 148.19

**Location description and accuracy:**

The Little Squaw mine is approximately 3 miles south of the southeast end of Squaw Lake on the ridge between Little Squaw and Squaw Creeks; it is approximately 3 miles above Little Squaw Lake (sec. 34, T. 32 N., R. 3 W., of the Fairbanks Meridian). The mine location is shown by a mine symbol on the current topographic map, and the location is also shown on fig. 2 in Chipp (1970); the location is accurate within a 1/4-mile radius.

**Commodities:**

**Main:** Au

**Other:** Ag, Pb, Zn

**Ore minerals:** Arsenopyrite, galena, gold, pyrite, scorodite, sphalerite

**Gangue minerals:** Quartz

**Geologic description:**

The vein on the Little Squaw property is one of several auriferous quartz veins in an area trending northeast from the heads of Tobin and Big creeks to Squaw and Little Squaw creeks. In general, most of the gold-bearing quartz veins in this area are in or near steeply-dipping, northwest-trending normal faults in Devonian quartz-muscovite schist, phyllite, and quartzite intruded by Devonian mafic sills and dikes (Chipp, 1970). The mafic intrusions have been metamorphosed to greenstone or greenschist. Major structural features include large-scale northeast-trending anticlines and synclines, northeast-trending thrusts, and the northwest-trending, high-angle cross faults. Most of the veins are less than 10 feet thick and are discontinuous, pinching out within a few hundred feet or less. The veins are composed principally of white crystalline to microcrystalline quartz, and their sulfide content is generally less than 5 percent. The principal sulfides (in relative order of abundance) are arsenopyrite, galena, sphalerite, and pyrite. Scorodite and limonite are commonly oxidation products. The quartz veins exhibit evidence of post-depositional shearing, indicating that the veins were emplaced before or during fault movement. The genesis of these gold deposits is still in question; various authors have hypothesized ge-

netic links to a variety of felsic and mafic igneous rocks from which the gold was remobilized during metamorphism (Mertie, 1925; Boadway, 1933; Chipp, 1970; Dillon, 1982).

The Little Squaw vein is generally described as brecciated and recrystallized quartz containing free gold, pyrite, arsenopyrite, galena, and sphalerite. Ashworth (1983) described two generations of quartz: (1) 'barren' massive, white, coarsely crystalline quartz on the hanging wall that is generally devoid of sulfides; and (2) 'main stage' quartz in the footwall that contains smeared arsenopyrite and scorodite, and gold that forms blebs in the quartz and wires in the vugs. At the surface, the vein is 4 feet wide and dips approximately 80 degrees south. At the bottom of a 60-foot winze the dip flattens to 60 degrees south, and the vein reportedly consists of several quartz stringers with abundant arsenopyrite. The vein averages 67 inches wide and consists mostly of barren quartz except for an 8- to 12-inch-wide footwall zone which appears streaked and ribbony due to abundant pyrite and arsenopyrite. Native gold, as flakes or wires, is common at the Little Squaw. In 1933, the vein was described as having a proven length of 200 feet and a depth of 130 feet with a grade of \$38.50 per ton over a 4-foot width (\$20 per ounce of gold) (Boadway, 1933). In 1934, a weighted average value of 0.505 ounce of gold per ton was determined by using the lower of duplicate assays.

**Alteration:**

Veins are oxidized generally to about 75 ft depth; the principal oxidation products include scorodite and limonite.

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

A 185-foot adit with a raise to the surface at 160 feet and a 60-foot winze at 135 feet were reported completed between 1910 and 1933 (Cobb, 1983, OFR 83-278; Stanford, 1931). A road from the Little Squaw to a mill site on Spring Creek was built in 1909-10. Milling 27 tons of ore from the Little Squaw mine at this mill produced an average recovery of \$22 per ton at \$20 per ounce of gold; the recovery probably was only the free gold. In 1912, a 3-stamp mill was brought to Big Creek to test the Little Squaw ore and used until 1915. Considerable development work has been conducted in the area beginning in

1960 and has been reported to include 1,500 feet of underground workings, surface trenching, and installation of a 100-ton-per-day mill. While most of this work probably focused on the nearby Mikado property, some of the work was probably performed on the Little Squaw property as well.

**Production notes:**

Early production figures probably combined placer and lode production and indicate that approximately 65,000 oz were produced from lode and placer through 1995. Goldfarb and others (1997) reported that lode production was 17,000 oz and associated placer production was 46,000 oz.

**Reserves:**

Various reserve figures have been published for the Chandalar area lode properties; these typically do not differentiate reserves for specific properties. Some of these figures are as follows: 12,000 tonnes grading 75 grams of gold per ton at the Mikado and Little Squaw (Nokleberg and others, 1996); an inferred lode reserve for the Chandalar district lodes of 45,000 tons with a grade of 2 ounces of gold per ton was reported as late as 1997 (Swainbank and others, 1998). Baggs and others (1988) reported measured reserves of 9,100 metric tons grading 58.70 grams of gold per metric ton as of 1980.

**Additional comments:**

See also: Mikado Mine (CH045); there may be some confusion in the literature between Little Squaw and Mikado veins. The names Idaho-Alaska Corp. and Engineers Exploration Syndicate associated with this property refer to the transaction in 1932 in which the Idaho-Alaska Corp. took over the leases and options on various properties in the Chandalar district formerly held by the Engineers Exploration Syndicate. Other site names are names of claims on or near the mine.

**References:**

Brooks, 1911; Brooks, 1912; Maddren, 1913; Brooks, 1914; Mertie, 1925; Thompson, 1925; Reed, 1927; Reed, 1930 (MR 31-4); Stanford, 1931; Boadway, 1932; Boadway, 1933; Anderson, 1944; Brosgé and Reiser, 1964; Berg and Cobb, 1967; Heiner and Wolff, 1968; Koschmann and Bergendahl, 1968; Chipp, 1970; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Grybeck and DeYoung, 1978; Reiser and others, 1979; Arctic Environmental Information and Data Center, 1982; Bundtzen and others, 1982; Dillon, 1982; Ashworth, 1983; Eakins and others, 1983; Mosier and others, 1987; Baggs and others, 1988; Dillon and others, 1989; Nokleberg and others, 1993; Nokleberg and others, 1996; Goldfarb and others, 1997; Swainbank and others, 1998.

**Primary reference:** Chipp, 1970

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Summit****Site type:** Prospect**ARDF no.:** CH041**Latitude:** 67.54**Quadrangle:** CH C-3**Longitude:** 148.20**Location description and accuracy:**

The Summit lode is at an elevation of about 4,800 feet, approximately 1/2 mile south of Little Squaw Peak, between Little Squaw Peak and peak 5072 (St. Marys Peak as shown on fig. 2 in Chipp, 1970) in SW1/4 sec. 3, T. 31 N., R. 3 W., of the Fairbanks Meridian. The location is accurate within a 1/4-mile radius.

**Commodities:****Main:** Ag, Au**Other:** Cu, Pb, Sb**Ore minerals:** Arsenopyrite, gold, scorodite**Gangue minerals:** Quartz**Geologic description:**

The Summit lode is one of the four principal auriferous quartz vein systems in the Chandalar area. The Summit vein system, like the others in the area, is localized along steeply-dipping, northwest-trending normal faults in Devonian quartz-muscovite schist, phyllite, and quartzite, intruded by Devonian mafic sills and dikes (Chipp, 1970). In general, the veins in the Chandalar area are less than 10 feet thick and are discontinuous, pinching out within a few hundred feet or less. The veins are composed principally of white crystalline to microcrystalline quartz, and their sulfide content is generally less than 5 percent. The principal sulfides (in relative order of abundance) are arsenopyrite, galena, sphalerite, and pyrite. Scorodite and limonite occur commonly as oxidation products. The quartz veins exhibit evidence of shearing, indicating that the veins were emplaced before or during fault movement. Major structural features in the area include large-scale north-east-trending anticlines and synclines, northeast-trending thrusts, and the northwest-trending, high-angle cross faults.

The Summit lode follows the Summit fault and the strikes N80W and dips 75 to 80 degrees south. Early workings on the property exposed a vein 1.5 to 2 feet wide. A sample from these workings was reported to have assayed \$54 of gold per ton (Maddren, 1913). Dump samples of vein material collected by Chipp (1970) contained abundant arsenopyrite and scorodite in sheared and brecciated quartz; assays of these samples returned val-

ues of 0.5 to 6.6 ppm Au. Ashworth (1983) described two generations of quartz at the Summit lode. The older generation is coarsely crystalline, massive, white quartz. It is in the hanging wall and is as much as 4 feet wide. It contains less than 5 percent sulfides and little gold. The younger generation pinches and swells; it adjoins the older veins, but typically follows in the footwall. It is generally finer grained and contains bands accentuated by smeared graphite and arsenopyrite. Scorodite is common, and free gold occurs as blebs and occasional wires.

The genesis of the gold deposits in the Chandalar district is still in question. Various authors have hypothesized genetic links to a variety of felsic and mafic igneous rocks from which the gold was remobilized during metamorphism (Mertie, 1925; Boadway, 1933; Chipp, 1970; Dillon, 1982).

**Alteration:**

Oxidation of vein material produces scorodite and limonite.

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

Maddren (1913) reported a 54-foot-deep shaft and a 72-foot drift along the vein. Prospect pits have been dug along the Summit fault/vein system as far east as the pass between Big Creek and McClellan Creek and west along the spur going into Big Squaw Creek. Heiner and Wolff (1968) report that there was some development work in the 1950s and a small mill was established for the ore in the headwaters of Big Creek.

**Production notes:****Reserves:****Additional comments:**

See also: Mikado (CH045), Little Squaw(CH040), Star(CH042).

**References:**

Maddren, 1913; Mertie, 1925; Boadway, 1932; Boadway, 1933; Anderson, 1944; Holdsworth, 1952; Holdsworth, 1955; Saunders, 1959; Heiner and Wolff, 1968; Chipp, 1970; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Reiser and others, 1979; Bundtzen and others, 1982; Dillon, 1982; Ashworth, 1983; Cobb and Cruz, 1983

**Primary reference:** Chipp, 1970

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Star Group; Tonopah; Rex****Site type:** Prospect**ARDF no.:** CH042**Latitude:** 67.54**Quadrangle:** CH C-3**Longitude:** 148.21**Location description and accuracy:**

The Star prospect is located at an elevation of about 5,000 ft just south of St. Marys Peak (as shown on fig. 2 in Chipp, 1970); it is about 1 mile east of the Mikado mine (CH045) and 4 1/4 miles south of Squaw Lake (SE1/4 sec. 4, T. 31 N., R. 3 W., of the Fairbanks Meridian). The Tonopah claim is the easternmost claim on the Star prospect and is described as being just west of Big Creek and the upper airstrip. The location is accurate within a 1/4-mile radius.

**Commodities:****Main:** Ag, Au**Other:****Ore minerals:** Arsenopyrite, gold, scorodite**Gangue minerals:** Quartz**Geologic description:**

The Star claim group (including the Tonopah claim) covers one of the four principal auriferous quartz vein systems in the Chandalar area. The vein system of the Star group, like the other vein systems in the area, is localized along steeply-dipping, northwest-trending normal faults in Devonian quartz-muscovite schist, phyllite, and quartzite, intruded by Devonian mafic sills and dikes (Chipp, 1970). In general, the veins in this area are less than 10 feet thick and are discontinuous, pinching out within a few hundred feet or less. The veins are composed principally of white crystalline to microcrystalline quartz, and their sulfide content is generally less than 5 percent. The principal sulfides in relative order of abundance are arsenopyrite, galena, sphalerite, and pyrite. Scorodite and limonite commonly are oxidation products. The quartz veins exhibit evidence of shearing, indicating that they were emplaced before or during fault movement. Major structural features in the area include large-scale northeast-trending anticlines and synclines, northeast-trending thrusts, and the northwest-trending, high-angle cross faults.

The fault zone on which the Star group is located lies between the Mikado and Summit faults (Chipp, 1970). A prospect pit on the property exposed a 6-foot-wide, partly vuggy quartz vein containing visible arsenopyrite and scorodite. The vein trends approximately

N70W and dips 70 to 90 degrees northeast. A grab sample assayed 11 ppm Au. Another pit exposed vuggy, brown-stained quartz containing phyllite inclusions and minor arsenopyrite. On the Tonopah claim (west of the airstrip on upper Big Creek) trenching has exposed a 50-foot-wide fracture zone containing numerous east-west-trending, vuggy, iron-stained quartz-filled fractures 2 inches or less in width. Chipp (1970) suggests that this zone is probably the continuation of the Star vein system.

The genesis of the gold deposits in the Chandalar district is still in question. Various authors have hypothesized genetic links to a variety of felsic and mafic igneous rocks from which the gold was remobilized during metamorphism (Mertie, 1925; Boadway, 1933; Chipp, 1970; Dillon, 1982).

**Alteration:**

Oxidation of sulfides in the quartz veins.

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

The Star prospect has been prospected by a 10-foot shaft on the Star No. 2 claim and by several pits and trenches on the Star No. 1 and 3 claims.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Summit prospect (CH041), Mikado mine(CH045), Little Squaw mine (CH040).

**References:**

Mertie, 1925; Reed, 1927; Reed, 1930 (MR 31-4); Boadway, 1932; Boadway, 1933; Anderson, 1944; Heiner and Wolff, 1968; Chipp, 1970; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Bundtzen

and others, 1982; Dillon, 1982; Cobb and Cruz, 1983; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Chipp, 1970

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Big Creek****Site type:** Mine**ARDF no.:** CH043**Latitude:** 67.52**Quadrangle:** CH C-3**Longitude:** 148.20**Location description and accuracy:**

This major placer mining area is approximately 5 1/2 miles south of the south end of Squaw Lake. The reference point is at the mine symbol shown on the topographic map and near the downstream limit of the mined area (junction of sections 9, 10, 15, and 16, T. 31 N., R. 3 W., of the Fairbanks Meridian). Chipp (1970) showed that the stream has been placer mined at least a mile upstream from the reference point to its headwaters just below the Chandalar mine area. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:** Ag, As, Cu, Mo, Pb, REE, Sb, Th, Ti, U, W**Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Big Creek is one of the major placer gold producers in the Chandalar district. It drains directly from the area of several of the Chandalar gold quartz properties (CH040-042). The gravels in the stream are relatively shallow, averaging about 12 feet deep on the uppermost portion of the creek and deepening to about 20 to 22 feet on the lower portion of the mined ground (Reed, 1930, MR 31-4; MR 195-13). The gold occurs in the lower 3 to 5 feet, and there is very little gold on bedrock. The gravel is fairly coarse with numerous greenstone boulders as much as 3 feet in diameter. There is only one generation of placers in the drainage (they are not separable into pre- and post-glacial deposits). The gold is reported to be bright yellow, generally irregular, and shot-like to flattened, but some occurs as crystals. Its size averages 1 mm with many 2- to 3-mm nuggets. A few nuggets contain included quartz crystals, limonite, and goethite. It is also reported that the concentrates contain a large suite of heavy minerals in addition to the gold (Mertie, 1925; White, 1952). These heavy minerals include monazite, magnetite, hematite, rutile, pyrite, arsenopyrite, chalcopyrite, galena, stibnite, molybdenite, scheelite, and uranothorianite. A pan concentrate sample had eU of 0.05 percent (White, 1952, p. 11).

Coarse gold was reported several miles downstream from the mined area, but there is no

evidence that mining has occurred in this lower area.

There are at least two reports of a quartz vein in the creek bed on the upper reaches of Big Creek (Chipp, 1970; Heiner and Wolff, 1968). Heiner and Wolff (1968) described it as a gold-bearing mineralized zone that may extend from Big Creek to upper Tobin Creek.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; medium

**Site Status:** Active

**Workings/exploration:**

The placers were worked only by small-scale methods until the 1950s, when bulldozers were brought in. Some drift mining was done in the frozen gravel. Mining has continued sporadically through at least the mid-1990s. A small mill was set up in 1909-1910 on the discovery claim to mill ore from a quartz vein on the property, but its use was discontinued shortly thereafter.

**Production notes:**

Big Creek has been a major producer in the Chandalar district. Chipp (1970) reported production from Big Creek to be about 15,000 oz, and Dillon (1982) stated that two-thirds of that total was produced after 1950. There are no reliable figures for later years.

**Reserves:**

**Additional comments:**

See also: St. Marys Gulch (Creek) (CH044). The first recorded occurrence of monazite in Alaska was from Big Creek (Mertie, 1925, p. 260). Some of the following references describe both the lode and placer occurrences in the Big Creek area.

**References:**

Brooks, 1907; Brooks, 1908; Brooks, 1909; Maddren, 1910; Brooks, 1911; Brooks, 1912; Maddren, 1913; Brooks, 1915; Brooks, 1916 (B642-A); Brooks, 1922; Brooks, 1923; Wimpler, 1924; Brooks and Capps, 1924; Mertie, 1925; Thompson, 1925; Wimpler, 1925; Smith, 1926; Reed, 1929; Smith, 1929; Reed, 1930 (MR 31-4); Reed, 1930 (MR 195-13); Smith, 1930 (B813-A); Smith, 1932; Smith, 1933 (B836-A); Smith, 1933 (B844-A); Smith, 1934 (B857-A); Smith, 1934 (B864-A); Smith, 1936; Smith, 1937;

Smith, 1938; Smith, 1939 (B910-A); Smith, 1939 (B917-A); Smith, 1941; Smith, 1942; Stewart, 1949; Glover, 19?? (MR 195-1); Saarela, 1951; Williams, 1951; Wedow and others, 1952; White, 1952; Nelson and others, 1954; Holdsworth, 1952; Holdsworth, 1955; Anderson, 1956; Brosgé and Reiser, 1964; Overstreet, 1967; Heiner and Wolff, 1968; Eakins, 1969; Chipp, 1970; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); Eakins and Forbes, 1976; Cobb, 1977 (OFR 77-168B); Grybeck, 1977; Grybeck and DeYoung, 1978; DeYoung, 1978; Reiser and others, 1979; Dillon, 1982; Cobb and Cruz, 1983; Dillon and others, 1989; Swainbank and others, 1995; Bundtzen and others, 1996; Swainbank and others, 1997.

**Primary reference:** Mertie, 1925

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): St. Marys Creek (Gulch)****Site type:** Mine**ARDF no.:** CH044**Latitude:** 67.52**Quadrangle:** CH C-3**Longitude:** 148.21**Location description and accuracy:**

St. Marys Creek drains the Chandalar mine area and joins Big Creek near the lower limit of mining on Big Creek. The reference point is near the junction of St. Marys Creek and Big Creek (SE1/4 sec. 9, T. 32 N., R. 3 W., of the Fairbanks Meridian). It is approximately 5 miles south of the southwest end of Squaw Lake. Mining has occurred upstream from the reference point for approximately 1/2 mile. The location is accurate within a 1/2-mile radius. See fig. 2 in Chipp (1970).

**Commodities:****Main:** Au**Other:** As, Cu, Mo, Pb, REE, Sb, Th, Ti, U, W**Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Maddren (1913) noted that most of the gold that had been produced in the Chandalar district up to that time had come from upper Big Creek and St. Marys Gulch. Despite its production, there is little information describing St. Marys Creek, which drains the area of gold quartz lode deposits in the Chandalar district (CH041-042). Chipp (1970) noted that pan samples from Big Creek and St. Marys Gulch show the gold to be bright yellow and irregular shot-like to flattened; a few crystals occur. The average grain size of the gold is said to be about 1 mm, and there are many 2- to 3-mm nuggets (Chipp, 1970). Some nuggets include quartz crystals and iron oxides. It is reported that, in addition to the gold the concentrates contain a large suite of heavy minerals including monazite(?), magnetite, hematite, rutile, pyrite, arsenopyrite, chalcopyrite, galena, stibnite, molybdenite, scheelite, and uranothorianite.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; medium

**Site Status:** Inactive

**Workings/exploration:**

Most of the early mining was by drifting or by hand. Heiner and Wolff (1968) reported drift mining in the winter of 1915. Some exploration work, including drilling and sampling, was reported in 1986 on several properties in the area, including St. Marys Creek (Bundtzen and others, 1987).

**Production notes:**

Reported to be one of the major gold producers of the Chandalar area, although there is no record of actual production.

**Reserves:****Additional comments:**

See also: Big Creek (CH043).

**References:**

Brooks, 1909; Maddren, 1910; Maddren, 1913; Brooks, 1915; Brooks, 1916 (B642-A); Reed, 1929; Reed, 1930 (MR 31-4); Reed, 1930 (MR 195-13); Anderson, 1956; Saunders, 1959; Heiner and Wolff, 1968; Eakins and Forbes, 1976; Chipp, 1970; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); Cobb, 1977 (OFR 77-168B); Cobb and Cruz, 1983; DeYoung, 1978; Bundtzen and others, 1987.

**Primary reference:** Chipp, 1970

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Mikado mine (Mikado; Little Mikado; Tobin; Carter; Eclipse; Overlook; Engineers Exploration Syndicate; Idaho-Alaska Corp.)

**Site type:** Mine

**ARDF no.:** CH045

**Latitude:** 67.54

**Quadrangle:** CH C-3

**Longitude:** 148.25

**Location description and accuracy:**

The Mikado mine is at an elevation of about 4,600 ft, approximately 1 1/2 miles southwest of Little Squaw Peak and 4 1/2 miles south-southwest of the south end of Squaw Lake near the east branch of the headwaters of Tobin Creek (SE1/4 sec. 5, T. 31 N., R. 3 W., of the Fairbanks Meridian). This location probably represents the Mikado mine portal and is accurate within a 1/4-mile radius.

**Commodities:**

**Main:** Au

**Other:** Ag, As, Pb, Sb, Zn

**Ore minerals:** Arsenopyrite, galena, gold, pyrite, siderite, sphalerite, stibnite

**Gangue minerals:** Quartz

**Geologic description:**

Discovered in 1909, the Mikado vein is one of several auriferous quartz veins in an area approximately 1 mile wide and 2 1/2 miles long between the heads of Tobin and Big creeks to the south and Squaw and Little Squaw creeks to the north. In general, most of the gold-bearing quartz veins in this area are in or near steeply dipping, northwest-trending normal faults in Devonian quartz-muscovite schist, phyllite, and quartzite intruded by Devonian mafic sills and dikes (Chipp, 1970). The intrusions have been metamorphosed to greenstone or greenschist. Major structural features include large-scale northeast-trending anticlines and synclines, northeast-trending thrusts, and the northwest-trending, high-angle cross faults.

The Mikado vein/fault system is described as a shear zone about 50 feet wide which contains sub-parallel, highly faulted and brecciated, steeply dipping (80 N), auriferous quartz veins up to 6 feet thick which have been exposed for over 3,000 feet along the Mikado fault (Maddren, 1913). Although the Mikado vein is said to average 6 feet in thickness over a 500-foot strike length, most of the ore shoots are discontinuous and generally are a few tens or hundreds of feet long. According to Boadway (1933), the Mikado vein in the underground workings consists of lenses of auriferous quartz, mostly on the hanging-

wall side of a gouge-filled fault. The vein appears to be approximately 35 inches or less in width in the upper levels and narrows to 16 inches at a depth of 99 feet. Ore shoots in the vein reportedly assayed from \$37 per ton to as high as \$439 per ton at \$20 per ounce of gold), and one ore shoot averaged \$49.50 per ton over a 35-inch width (Chipp, 1970). Drilling has intersected additional quartz in both the hangingwall and footwall of the fault.

In a general description of the Chandalar gold-quartz lodes, Chipp (1970) indicated that white, crystalline to microcrystalline quartz is the dominant gangue mineral and that crystals of quartz are commonly found in small vugs. Banding in the quartz veins is produced by shearing and by elongated cavities in the veins parallel to the walls. Siderite occurs in minor amounts. Ashworth (1983) described three generations of quartz in the Mikado deposit: (1) lenses and pods of quartz plus or minus pyrite plus or minus dolomite, which are possibly pre-faulting metamorphic segregations; (2) massive, white, coarsely crystalline quartz with less than 5 percent sulfides and trace gold; and (3) 'main stage' quartz, which is fine grained, white, and in places vuggy. The sulfide assemblage in main stage quartz consists in decreasing order of abundance of arsenopyrite, galena, sphalerite, stibnite, and pyrite. Native gold, as flakes or wires, is common in the Mikado and typically is along the borders of sulfide grains or in quartz near sulfides. Sulfides generally form less than 5 percent of the veins.

Early workers postulated the source of the gold-quartz mineralization to be small granitic intrusives, based largely on the presence of monazite and rutile in the placers (Mertie, 1925). Chipp (1970) suggested that there may be a genetic relationship with the the larger greenstone bodies as well. The genesis of these gold deposits is still in question, although various workers have hypothesized some genetic link to a variety of felsic and mafic igneous rocks from which the gold was remobilized during metamorphism (Mertie, 1925; Bodway, 1933; Chipp, 1970; Dillon, 1982).

**Alteration:**

Oxidation of vein material produces scorodite and limonite.

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Maddren (1913) reported open cuts that exposed auriferous quartz in six places over a strike length of 3,000 feet. Underground workings, including a 100-foot shaft and 160-foot adit, reportedly were completed by 1913. The underground workings were reopened in 1960, and an additional 600 feet of new workings were driven. An additional 800 feet was driven in 1962-63. An unknown amount of work was done in late 1960s, and again in the late 1970s and early 1980s (Bundtzen and others, 1982). Some bulldozer trenching was completed on veins in the area in 1962.

**Production notes:**

The amount of gold produced from the Mikado vein prior to 1960 is unknown; however, a small stamp mill was constructed on Spring Creek by 1913 to process ore from the Mikado and Little Squaw mines. Production between 1960 and 1979 was reported to be approximately 1,000 oz Au and 200 oz Ag (Cobb and Cruz, 1983). In 1979 the Little Squaw Gold Mining Co. resumed development and seasonal production, and the ore was processed through a cyanide leach-flotation plant on Tobin Creek at a rate of 100 to 125 tons per day (Bundtzen and others, 1984). Production during 1981 was reported as 4,000 tons of ore worth \$1.6 million (Bundtzen and others, 1982). In 1983 it was estimated that 10,000 oz of gold had been recovered during the last several years (1979-1982?) (Bundtzen and others, 1984). Lode production apparently ceased in 1983 due to lack of developed reserves and the high cost of the remote operations.

**Reserves:**

Various reserve figures, which generally do not define reserves for specific deposits, have been published for the Chandalar area lode properties. Some of these figures are as follows: Bundtzen and others (1982) reported that in 1979 the Mikado property had proven reserves of 30,000 tons of 1 oz of gold per ton, and Nokleberg and others (1987) noted 12,000 tonnes grading 75 grams of gold per tonne at the Mikado and Little Squaw mines. An inferred lode reserve for the Chandalar district lodes of 45,000 tons with a grade of 2 oz of gold per ton was reported as late as 1997 (Swainbank and others, 1998). Heiner and Wolff (1968) reported proved reserves estimated to be \$2,000,000 with the ore valued at \$85 per ton. Baggs and others (1988) reported 13,600 metric tons of measured, 4,500 metric tons indicated and 18,200 metric tons inferred at a grade of 85.2 grams of gold per metric ton as of 1980.

**Additional comments:**

There has been active exploration and small production up to the present. Recent literature, and especially news notes, may confuse the Little Squaw and Mikado mines because the Mikado is owned by Little Squaw Mining Co. References to the Little Squaw property thus may refer to either the Little Squaw Mine, the Mikado mine, or both. The names Idaho-Alaska Corp. and Engineers Exploration Syndicate associated with this property refer to the transaction in 1932 in which the Idaho-Alaska Corp. took over the leases and options formerly held by the Engineers Exploration Syndicate on various properties in the Chandalar district.

**References:**

Maddren, 1913; Brooks, 1914; Mertie, 1925; Thompson, 1925; Reed, 1927; Reed, 1930; Stanford, 1931; Boadway, 1932; Boadway, 1933; Smith, 1934 (B857-A); Anderson, 1944; Saunders, 1959; Williams, 1960; Saunders, 1962; Heiner and Wolff, 1968; Chipp, 1970; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1973 (B1274); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Reiser and others, 1979; Bundtzen and others, 1982 (ADGGS Ann. Rept. 1981); Dillon, 1982; Bundtzen and others, 1982 (ADGGS Ann. Rept. 1981-82); Cobb and Cruz, 1983; Ashworth, 1983; Eakins and others, 1983; Bundtzen and others, 1984; Eakins and others, 1985; Bundtzen and others, 1987; Nokleberg and others, 1987; Baggs and others, 1988; Nokleberg and others, 1988; Bundtzen and others, 1988; Bundtzen and others, 1992; Nokleberg and others, 1993; Nokleberg and others, 1996; Swainbank and others, 1998.

**Primary reference:** Chipp, 1970; Ashworth, 1983

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Eneveloe (Bonanza; Jupiter; Woodchuck; Venus; Golden Eagle; First Chance; Last Chance; Envelope)**

**Site type:** Prospect

**ARDF no.:** CH046

**Latitude:** 67.54

**Quadrangle:** CH C-3

**Longitude:** 148.20

**Location description and accuracy:**

This site is at an elevation of about 4,700 ft, approximately 3 1/2 miles south of Squaw Lake and 1/4 mile south of Little Squaw Peak (NW1/4 sec. 3, T. 31 N., R. 3 W., of the Fairbanks Meridian); Chipp (1970) described the location of the Eneveloe and Bonanza claims as being north of the Summit mine area (which is on the south side of the saddle just south of Little Squaw Peak) and south of Little Squaw Peak. Mineral surveys show six patented claims (Eneveloe, Bonanza, Golden Eagle, Jupiter, Woodchuck, and Venus), and these, along with the presumably unpatented First Chance and Last Chance claims which are not shown on the mineral survey, are considered to constitute the Eneveloe property. The location is accurate within a 1/4-mile radius.

**Commodities:**

**Main:** Au

**Other:** Ag, Cu, Pb, Sb, Zn

**Ore minerals:** Galena, gold, scorodite

**Gangue minerals:** Quartz

**Geologic description:**

The Eneveloe lode consists of discontinuous quartz veins 4 to 6 feet wide, at least one of which carries free gold. According to Maddren (1913) a sample from a surface outcrop on the Last Chance claim assayed \$198 (approximately 9.6 oz of gold). Prospect pits on the Jupiter claim, located along the Summit fault west of the Summit mine, exposed quartz containing minor arsenopyrite and scorodite. In the area of the Eneveloe and Bonanza claims, minor quartz veins crop out and prospect pits expose small and discontinuous quartz veins containing minor galena and scorodite. The veins are traceable for 1,500 feet and generally dip steeply south.

The Eneveloe lode is one of several gold-bearing quartz veins in the Chandalar district, an area approximately 1 mile wide and 2 1/2 miles long lying between the heads of Big, Tobin, Squaw and Little Squaw creeks. The principal deposits in this area are localized along three steeply dipping, northwest-trending normal faults in Devonian quartz-

muscovite schist, phyllite and quartzite, intruded by Devonian mafic sills and dikes (Chipp, 1970). The mafic intrusions have been metamorphosed to greenstone or green-schist. From north to south these normal faults are the Little Squaw, Summit, and Mi-kado.

The Eneveloe property is along the Summit fault a short distance west of the Summit mine. Most of the quartz veins in the district are discontinuous along the structures, generally pinching out within a few hundred feet or less. Widths may vary from a few inches to several feet but are generally less than 10 feet. The quartz veins exhibit evidence of shearing, which indicates that the veins were emplaced before or during fault movement. Sulfide content of the veins is typically less than 5 percent, with the primary sulfides being, in relative order of abundance, arsenopyrite, galena, sphalerite, and pyrite. Much of the gold occurs as native gold. Weathering near the surface has oxidized and leached the sulfides to produce scorodite and limonite. The genesis of these gold deposits is still in question, although various authors have hypothesized genetic links to a variety of felsic and mafic igneous rocks from which the gold was remobilized during metamorphism (Mertie, 1925; Boadway, 1933; Chipp, 1970; Dillon, 1982).

**Alteration:****Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

Surface and underground workings include an adit 165 feet in length driven before 1913 between the First Chance and Last Chance claims that extend along the vein to a depth of 40 feet (Maddren, 1913). Another adit was opened on the Woodchuck claim, but there is no description of its extent. The property has also been explored along 1,000 feet of its length by open cuts and other shallow workings.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Summit (CH041), Star (CH042), Mikado (CH045), Little Squaw (CH040). The Eneveloe claim, along with the Bonanza and Golden Eagle, are shown on U.S. Mineral Survey 1995. The Jupiter and Woodchuck claims are shown on U.S. Mineral Survey 1629, and the Venus claims on U.S. Mineral Survey 1630.

**References:**

Maddren, 1913; Mertie, 1925; Reed, 1927; Reed, 1930 (MR 31-4); Stanford, 1931; Boadway, 1932; Boadway, 1933; Anderson, 1944; Heiner and Wolff, 1968; Chipp, 1970; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983; Bundtzen and others, 1984.

**Primary reference:** Chipp, 1970

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Big Squaw Creek; Squaw Creek

**Site type:** Mine

**ARDF no.:** CH047

**Latitude:** 67.54

**Quadrangle:** CH C-3

**Longitude:** 148.22

**Location description and accuracy:**

Big Squaw Creek (Squaw Creek on the modern topographic map) drains the area of the Chandalar gold lodes and terminates at Squaw Lake. The reference point for this property is on the upper creek approximately 4 miles south of Squaw Lake and 0.7 mile southwest of Little Squaw Peak (sec. 4, T. 32 N., R. 3 W., of the Fairbanks Meridian). The location is accurate within a 1/4-mile radius.

**Commodities:**

**Main:** Au

**Other:** Ag, Mo, Mz, Pb, Sb, Th, U

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Squaw Creek cuts through the Chandalar lode gold district, and the placer gold occurrences in this area are generally attributed to direct weathering of the gold-bearing veins. In spite of the proximity of Squaw Creek to the gold-bearing veins, most of the placer mining activity on this creek appears to have been limited to an area near the head of the creek (Chipp, 1970). This area on the upper creek, just below the Jupiter claim on the Eneveloe prospect (CH046), was mined, although there was little gravel in the creek bed and in places the creek was running on bedrock. On the lower creek early efforts at mining the deeper gravels were thwarted as the gravels were thawed and the shafts were flooded. The gold that has been produced was in thin gravels along an irregular bedrock surface. The gravels are coarse and subangular with numerous greenstone boulders and slabs of schist. Glacial damming and disruption of drainage has created both pre- and post-glacial generations of placers. The placer concentrates contain gold, pyrite, arsenopyrite, stibnite, monazite, uranothorianite, galena, molybdenite, and zircon.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Not determined

**Workings/exploration:**

Small-scale surface workings, by hand methods only. Mining in 1923 was in gravel 3 to 4 feet deep. Mining was reported as late as 1928, but there is no information on any later activity.

**Production notes:**

No production data available.

**Reserves:****Additional comments:**

A sediment sample from the middle fork of Big Squaw Creek showing 0.001 percent eU contained trace monazite, uranothorianite, pyrite, galena, and rare molybdenite, and zircon (Nelson and others, 1954, p. 16, 18, table 10, sample 4638). This creek was called 'Big Squaw Creek' by A.G. Maddren (1913) in 1909. Uranothorianite in concentrates indicates a possible uraniferous lode deposit in the drainage; potentially mineable U and/or Th deposits are not known in the quadrangle. See also: Little Squaw Creek (CH039).

**References:**

Maddren, 1913; Mertie, 1925; Smith, 1926; Reed, 1929; Reed, 1930 (MR 31-4); Smith, 1930 (B813); Roehm, 1949 (IR 31-2); Nelson and others, 1954; Overstreet, 1967; Heiner and Wolff, 1968; Chipp, 1970; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); Eakins and Forbes, 1976; Cobb, 1977 (OFR 77-168B); DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983; Bundtzen and others, 1987; Maas, 1987; Swainbank and others, 1991; Swainbank and others, 1997.

**Primary reference:** Mertie, 1925

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Tobin Creek****Site type:** Mine**ARDF no.:** CH048**Latitude:** 67.53**Quadrangle:** CH C-3**Longitude:** 148.30**Location description and accuracy:**

Tobin Creek is a tributary to Chandalar Lake and heads just to the west of the Chandalar area gold lodes. The placer-mined area as shown on the map by Chipp (1970) is the lower 1/2 to 1/4 mile of the left-limit headwater tributary of Tobin Creek (sec. 6, T. 32 N., R. 3 W., of the Fairbanks Meridian). This branch of the headwaters of Tobin Creek drains directly from the area of the Mikado lode mine (CH045). The location is accurate within a 1/4-mile radius.

**Commodities:****Main:** Au**Other:** Pb, REE, W**Ore minerals:** Galena, gold, monazite, scheelite**Gangue minerals:****Geologic description:**

Tobin Creek drains the area of the Mikado mine, one of several gold-quartz lode deposits in the Chandalar district and the Mikado fault, along which the Mikado vein occurs. The stream has probably been one of the principal producers in the Chandalar area, but there is only a modest amount of information about this mine. Initial prospecting began in 1930 and was encouraging. Mining was begun by at least 1934. Concentrates contain hematite, monazite, scheelite, pyrite, magnetite, rutile, and galena in addition to the gold (White, 1952). The pay zone is reported to be more than 100 feet thick in thawed gravel.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small**Site Status:** Active**Workings/exploration:**

Prospecting with encouraging results began in 1930. Mining was reported sporadically from 1930 through as late as 1991. Bulldozer and hydraulic operations were set up in the 1950s.

**Production notes:**

Little production data are available, but the total has probably been significant. Heiner and Wolff (1968) reported that there had been moderate production from 1957 until 1968. Production of 2,129 ounces in 1983, said to be mostly from Tobin Creek but partially from Little Squaw Creek, was said to be more than double the 1982 production, and production in 1984 was expected to double again (Alaska Construction and Oil, 1984). Chandalar Development Corp. mined for two consecutive years on Tobin Creek and was reported to be the largest producer in the northern Alaska region (Bundtzen and others, 1992).

**Reserves:**

Alaska Construction and Oil (1984) reported that Canadian Barranca Ltd., Inc., the operator in 1984, considered placer reserves in Tobin Creek, Little Squaw Creek, and two additional unnamed creeks in the area to be at least 100,000 ounces with potential for as much as 500,000 ounces.

**Additional comments:**

See also: Little Squaw (CH039 ) and Big Creek (CH043) placers. A concentrate sample had a reported eU of 0.020 percent (White, 1952).

**References:**

Reed, 1929; Reed, 1930 (MR 31-4); Reed, 1930 (MR 195-13); Smith, 1933 (B836); Smith, 1933 (B844-A); Smith, 1936; Smith, 1937; Smith, 1938; Smith, 1939 (B917-A); Smith, 1939 (B917A); Smith, 1941; Smith, 1942; Roehm, 1949 (IR 31-2); Stewart, 1949; Glover, 19?? (MR 195-1); White, 1952; Holdsworth, 1952; Holdsworth, 1955; Nelson and others, 1954; Saunders, 1959; Brosgé and Reiser, 1964; Overstreet, 1967; Heiner and Wolff, 1968; Carnes, 1976; Chipp, 1970; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); Eakins and Forbes, 1976; Cobb, 1977 (OFR 77-168B); Grybeck, 1977; DeYoung, 1978; Grybeck and DeYoung, 1978; Bundtzen and others, 1982 (ADGGS Ann. Rept. 1981); Bundtzen and others, 1982 (ADGGS Ann. Rept. 1981-82); Cobb and Cruz, 1983; Eakins and others, 1983; Alaska Construction and Oil, 1984; Eakins and others, 1985; Bundtzen and others, 1987; Bundtzen and others, 1988; Green and others, 1989; Bundtzen and others, 1990; Swainbank and others, 1991; Bundtzen and others, 1992; Bundtzen and others, 1994; Nokleberg and others, 1996; Swainbank and oth-

ers, 1997.

**Primary reference:** Chipp, 1970

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Kelty

**Site type:** Prospect

**ARDF no.:** CH049

**Latitude:** 67.56

**Quadrangle:** CH C-3

**Longitude:** 148.27

**Location description and accuracy:**

The reference point for this property is approximately 2 miles west of the Little Squaw mine (CH040) between Squaw and Boulder creeks (sec. 32, T. 32 N., R. 3 W., of the Fairbanks Meridian). The exact location of the Kelty prospect is somewhat imprecise. It was described in Maddren (1913) as being along the same mineralized zone as the Summit (CH041) and Eneveloe (CH046) claim groups and 'situated on the southwest headwaters of Big Squaw Creek'. This would place the property within the Squaw Creek drainage west of Eneveloe and along the Summit fault. The location as shown in DeYoung (1978) is farther west into the Boulder Creek drainage. A sketch map in Mertie (1925) shows claims in this general area which extend across the divide between Big Squaw and Boulder creeks, and these may represent this property. The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:** Ag(?), Cu(?), Pb(?), Sb(?), Zn(?)

**Ore minerals:** Gold

**Gangue minerals:** Quartz

**Geologic description:**

There is little information about this prospect. Maddren (1913) described it as being west of, and along the same zone as, the Eneveloe property. Heiner and Wolff (1968) indicated that it is on a zone of crushed gold quartz. Dillon (1982) described it as steeply dipping (65 degrees southeast) auriferous quartz veins in schistose rock. It is reasonable to conclude that the prospect is similar to the other gold-quartz vein prospects and mines in the area. These are generally described as discontinuous quartz veins emplaced along steeply dipping, northwest-trending normal faults in Devonian quartz-muscovite schist, phyllite, and quartzite intruded by small mafic sills and dikes (Chipp, 1970). The intrusions have been metamorphosed to greenstone or greenschist. The quartz veins pinch and swell, generally pinching out within a few hundred feet or less. Their widths vary from a few inches to several feet but generally are less than 10 feet. The quartz veins exhibit evi-

dence of shearing, which indicates that the veins were emplaced before or during fault movement. Sulfide content of the veins is typically less than 5 percent. The primary sulfides are, in relative order of abundance, arsenopyrite, galena, sphalerite, and pyrite. Much of the gold occurs as native gold. Weathering near the surface has oxidized and leached the sulfides to produce scorodite and limonite. The genesis of these gold deposits is still in question, although various authors have hypothesized genetic links to a variety of felsic and mafic igneous rocks from which the gold was remobilized during metamorphism (Mertie, 1925; Boadway, 1933; Chipp, 1970; Dillon, 1982).

**Alteration:****Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Low-sulfide Au-quartz veins (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:****Production notes:****Reserves:****Additional comments:**

See also: Eneveloe (CH046), Summit (CH041), Little Squaw (CH040), and Mikado (CH045). No site-specific information available for this location.

**References:**

Maddren, 1913; Mertie, 1925; Heiner and Wolff, 1968; Grybeck, 1977; DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983.

**Primary reference:** Maddren, 1913

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Boulder Creek****Site type:** Occurrence**ARDF no.:** CH050**Latitude:** 67.56**Quadrangle:** CH C-3**Longitude:** 148.42**Location description and accuracy:**

This occurrence is on Boulder Creek, a tributary to the North Fork Chandalar River, about a mile east of the north end of Chandalar Lake (sec. 34, T. 32 N., R. 4 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

There is no description of this placer occurrence other than a reference to gold being produced from the creek in 1991 (Bundtzen and others, 1992, p. 28). It drains an area immediately west of the Chandalar gold quartz vein deposits.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes**Site Status:** Not determined

**Workings/exploration:**

Apparently some mining has occurred as late as 1991(Bundtzen and others, 1992).

**Production notes:**

Production of gold reported in 1991 (Bundtzen and others, 1992).

**Reserves:****Additional comments:**

Alaska Kardex No. 031-122 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Maas, 1987 (USBM OFR 10-87); Bundtzen and others, 1992.

**Primary reference:** Bundtzen and others, 1992

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Anderson Creek

**Site type:** Occurrence

**ARDF no.:** CH051

**Latitude:** 67.65

**Quadrangle:** CH C-4

**Longitude:** 148.62

**Location description and accuracy:**

This site is at an elevation of about 4,000 feet on the east side of Anderson Creek (SW1/4 sec. 26, T. 33 N., R. 5 W., of the Fairbanks Meridian), a south-flowing tributary of Baby Creek. It is approximately 11 miles north-northwest of Chandalar. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Chalcopyrite, malachite

**Gangue minerals:** Quartz

**Geologic description:**

A quartz vein containing malachite and chalcopyrite occurs in metamorphic rocks (mapped as amphibolite, gneiss, and schist) and associated skarn located between two masses of the granitic Baby Creek batholith (DeYoung, 1978).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Grybeck, 1977; DeYoung, 1978

**Primary reference:** DeYoung, 1978

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Arsine

**Site type:** Occurrence

**ARDF no.:** CH052

**Latitude:** 67.66

**Quadrangle:** CH C-4

**Longitude:** 148.66

**Location description and accuracy:**

The occurrence is at an elevation of about 5,100 feet near the head of Anderson Creek, a south-flowing tributary of Baby Creek (junction of secs. 21, 22, 27, 28, T. 33 N., R. 5 W., of the Fairbanks Meridian) approximately 12 1/2 miles north-northwest of Chandalar. The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Cu, Mo

**Other:** As

**Ore minerals:** Unspecified copper and molybdenum sulfides and an unspecified arsenic mineral

**Gangue minerals:**

**Geologic description:**

The property is near a thrust fault in lower Paleozoic metamorphic rocks between two masses of the Devonian(?) granitic Baby Creek batholith (DeYoung, 1978). No description of the occurrence is available. DeYoung (1978) noted that six claims were located in 1975 and listed the commodities of interest as Au and As. The U.S. Bureau of Mines, however, lists the commodities of interest as unspecified Cu and Mo sulfides and by-product As (Maas, 1987). As a Cu-Mo occurrence, the property is interesting because it is near the Geroe Creek porphyry prospect (CH053).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Six claims located in 1975 by Oil Development Co. of Texas.

**Production notes:**

**Reserves:**

**Additional comments:**

Alaska Kardex No. 031-067 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

DeYoung, 1978; Dillon, 1982; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Maas, 1987 (USBM OFR 10-87)

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Geroe Creek; MAS claims****Site type:** Prospect**ARDF no.:** CH053**Latitude:** 67.68**Quadrangle:** CH C-4**Longitude:** 148.81**Location description and accuracy:**

The reference point is at an elevation of 5,500 feet, near the divide between Geroe Creek and Willow Creek (NW1/4 sec. 24, T. 33 N., R. 6 W., of the Fairbanks Meridian) and at the center of a large claim block (239 claims). A second large claim block north-east of of the Geroe property, and contiguous with its northeast corner (U.S. Bureau of Mines, 1973), may be part of this large property. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Cu, Mo**Other:****Ore minerals:** Copper sulfides (chalcopyrite?), molybdenite**Gangue minerals:** Chlorite, quartz, sericite**Geologic description:**

The Geroe Creek prospect is one of several quartz stockworks and altered zones in the northeast-trending belt of Devonian peraluminous biotite-muscovite granites of the Baby Creek batholith and the Devonian metaluminous biotite-hornblende granites and granodiorites of the Horace Mountain plutons (Newberry and others, 1986). Porphyritic phases are locally present in these plutons, and Young and others (1997) reported that the mineralizing intrusives are porphyritic meta-granodiorites and biotite meta-granites. The country rocks are mainly Paleozoic schists and marble along with peraluminous meta-granodiorite. Young and others (1997) also noted that there is no skarn development in the calcareous rocks. The veinlets in the stockworks on the Geroe prospect contain disseminated molybdenite, chalcopyrite, and pyrite along with intense quartz-sericite-chlorite plus or minus epidote alteration. Eakins and others (1983, p. 41) reported Mo grades as much as 0.1 percent, and Nokleberg and others (1987) report that zones in the plutons as much as several meters thick contain values of 0.6 percent Cu, 0.02 percent Mo, and 0.1 grams of gold per ton.

**Alteration:**

Seritization and propylitization of porphyritic host rocks; quartz-sericite-chlorite plus or minus epidote; calcite.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Porphyry Cu-Mo (Cox and Singer, 1986; model 21a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

21a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

239 claims staked in 1975 and 1976.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Venus (CH065), Victor (CH064), Eva (CH063) and Evelyn Lee (CH059) prospects; Alaska Kardex No. 031-68 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

U.S. Bureau of Mines, 1973; Grybeck, 1977; DeYoung, 1978; Arctic Environmental Information and Data Center, 1982; Bundtzen and others, 1982 (ADGGS Ann. Rept. 1981); Bundtzen and others, 1982 (ADGGS Ann. Rept. 1981-21); Eakins and others, 1983; Newberry and others, 1986; Nokleberg and others, 1987; Maas, 1987 (USBM OFR 10-87); Nokleberg and others, 1988; Nokleberg and others, 1993; Nokleberg and others, 1996; Young and others, 1997.

**Primary reference:** Newberry and others, 1986

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (in upper Geroe Creek)

**Site type:** Occurrence

**ARDF no.:** CH054

**Latitude:** 67.71

**Quadrangle:** CH C-4

**Longitude:** 148.76

**Location description and accuracy:**

This site is at an elevation of about 4,200 feet on the west side of upper Geroe Creek approximately 16 miles north-northwest of Chandalar (site) and 15 miles west-northwest of the west end of Squaw Lake (sec. 6, T. 33 N., R. 5 W., of the Fairbanks Meridian). This site corresponds to unnamed loc. 86 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Zn

**Other:**

**Ore minerals:** Sphalerite

**Gangue minerals:**

**Geologic description:**

Limited information described this occurrence only as sphalerite in a boxwork of veinlets found in float (DeYoung, 1978). The area is mapped as peraluminous biotite-muscovite granite of the Baby Creek batholith. It is a few miles northeast of the Geroe Creek porphyry Cu-Mo property (CH053) and adjoins an unidentified large claim block (U.S. Bureau of Mines, 1973) that is immediately northeast of the Geroe Creek prospect. There is no other information available on this prospect.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Geroe Creek (CH053).

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Willow Creek

**Site type:** Occurrence

**ARDF no.:** CH055

**Latitude:** 67.64

**Quadrangle:** CH C-4

**Longitude:** 148.92

**Location description and accuracy:**

The reference point is the site of a reported zinc occurrence near a headwater tributary of Willow Creek (SW1/4 sec. 33, T. 33 N., R. 6 W., of the Fairbanks Meridian) (Brosgé and Reiser, 1964). Willow Creek is a tributary of Robert Creek and is located approximately 7 to 8 miles northeast of the north end of Twin Lakes. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:** Zn

**Ore minerals:** Gold, sphalerite(?)

**Gangue minerals:**

**Geologic description:**

Anomalous zinc values were obtained by X-ray analysis of a rock sample collected in an area mapped as Devonian(?) albite-chlorite-mica schist near the contact with calcareous schist and marble (Brosgé and Reiser, 1964). Two rock samples collected by Brosgé and Reiser (1972), which appear to be from the same location as the zinc-bearing sample, contained 5.6 ppm Au in one sample and 0.8 to 1.0 ppm Au in the other.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Brosgé and Reiser, 1972.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Big Jim Creek; Suklak Creek

**Site type:** Mine

**ARDF no.:** CH056

**Latitude:** 67.53

**Quadrangle:** CH C-5

**Longitude:** 149.05

**Location description and accuracy:**

Big Jim Creek is a west-flowing tributary into the southern lake of Twin Lakes, which are approximately 15 miles west of Chandalar. The location (SW1/4 sec. 2, T. 31 N., R. 7 W., of the Fairbanks Meridian) approximately coincides with locality 7 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:** Cu

**Ore minerals:** Copper, gold

**Gangue minerals:**

**Geologic description:**

This small placer mine produced native copper nuggets as well as gold (Reed, 1938). The amount of production is unknown, but it was probably quite small.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

Worked by rocker and panning as late as 1937. No further information available.

**Production notes:**

Small-scale placer mining for gold probably was sufficiently productive to cover wages.

**Reserves:****Additional comments:**

Suklak Creek is the old name for this stream, and it was worked by 'Big Jim' Edwards. Much of the information in the primary reference is hearsay.

**References:**

Reed, 1938; Dillon, 1982; DeYoung, 1978; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340).

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Phoebe Creek; Feebee Creek****Site type:** Occurrence**ARDF no.:** CH057**Latitude:** 67.57**Quadrangle:** CH C-5**Longitude:** 149.14**Location description and accuracy:**

The location of the reference point is speculative because the location of the occurrence is described only as being on a right-limit tributary of Phoebe Creek. The reference point is near a cabin shown on the topographic map on a large right-limit tributary of Phoebe Creek opposite the mouth of Mellow Creek (NE1/4 sec. 29, T. 32 N., R. 7 W., of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1938) reported that there is no record of prospecting on Phoebe Creek itself but that very good prospects were found on a right-limit tributary by Manual Mello in the early days 1900s. No other information is available on this occurrence. The occurrence is in an area underlain by Ordovician to Cambrian(?) feldspar-quartz schist, which has been intruded by biotite granite gneiss and aplite phases of the Devonian Baby Creek batholith (Dillon and others, 1996). Calcareous and siliceous hornfels have been developed near the intrusive contacts, and this entire assemblage is in thrust contact with Lower Paleozoic to Proterozoic units that are predominantly banded quartzite and graphitic schist.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None**Site Status:** Inactive**Workings/exploration:****Production notes:****Reserves:****Additional comments:****References:**

Maddren, 1910; Maddren, 1913; Reed, 1938; Heiner and Wolff, 1968; Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983; Dillon and others, 1996.

**Primary reference:** Reed, 1938**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Robert Creek; Sheep Creek****Site type:** Occurrence**ARDF no.:** CH058**Latitude:** 67.64**Quadrangle:** CH C-5**Longitude:** 149.19**Location description and accuracy:**

Robert Creek is one of the principal headwater tributaries to the Bettles River, and Sheep Creek is a significant right-limit tributary to Robert Creek. The confluence of Robert Creek and the Bettles River is approximately 5 miles west-northwest of the north end of Twin Lakes along Phoebe Creek. The mouth of Sheep Creek is approximately 3 1/2 miles upstream from this confluence. The literature is unclear as to which (and how many) tributaries to Robert Creek contain gold. Because Sheep Creek is a tributary to Robert Creek and has similar gold placers, the reference point is arbitrarily placed at the confluence of Robert and Sheep creeks, and the ambiguous published descriptions have been combined (sec. 32, T. 33 N., R. 7 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Maddren (1913) reported that gold prospects had been found on Sheep Creek and 'especially those tributary to Robert Creek', along with a number of other creeks around the headwaters of the Bettles River. Maddren also noted that the gold was found on the lower parts of the tributaries to Roberts Creek, where miners had cut down to the schist underlying the limestones and that only prospect work had been done. No other descriptive information as to any further work, if any, is available. Recent mapping shows that lower Roberts Creek occupies a valley between significant granitic bodies that make up the Devonian Horace Mountain plutons to the north and the Baby Creek batholith to the south (Dillon and others, 1996). These plutons intrude Ordovician to Cambrian(?) schists and marbles.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

Maddren (1913) did not actually visit this area, and his reports are based on Schrader (1900) and information from local prospectors. The published descriptions of the Robert Creek and Sheep Creek placer deposits are combined in this record. The only other gold occurrence known in tributaries to Robert Creek is Willow Creek (CH109). Reed (1938) points out that Maddren (1913) incorrectly identified Sheep Creek as Spruce Creek and Willow Creek as Sheep Creek.

**References:**

Maddren, 1910; Maddren, 1913; Heiner and Wolff, 1968; Mulligan, 1974; Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983; Dillon and others, 1996.

**Primary reference:** Maddren, 1913

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Evelyn Lee

**Site type:** Prospect

**ARDF no.:** CH059

**Latitude:** 67.66

**Quadrangle:** CH C-5

**Longitude:** 149.26

**Location description and accuracy:**

This site is at an elevation of about 4,400 feet on a ridge between Sheep Creek and Spruce Creek west of Horace Mountain (NW1/4 sec. 25, T. 33 N., R. 8 W., of the Fairbanks Meridian). Its location is taken from maps published on the Internet website of the current operator, Ventures Resource Corp. (URL <http://www.venturesresource.com/>). The known mineralized area extends approximately 1/2 mile northeast and southwest of the reference point. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Au, Cu

**Other:**

**Ore minerals:** Bornite, chalcopyrite, gold(?), pyrite

**Gangue minerals:**

**Geologic description:**

The Evelyn Lee prospect is one of a number of Cu skarn deposits in the Chandalar area which have been described in general by Newberry and others (1986). They are all located northwest of the belt of the Devonian(?) Horace Mountain granitic rocks. Many of the Cu skarns exhibit both prograde garnet/pyroxene and retrograde epidote and actinolite mineral assemblages. Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns tend to place them in the category of continental-margin, porphyry-related copper skarns.

Dillon and others (1996) mapped the area as Devonian Horace Mountain granite gneiss and Devonian felsic schists with proximal tactite and calcareous hornfels. The Devonian felsic schists are interpreted by Dillon and others (1996) as hypabyssal to plutonic in origin, but they are not included in the Horace Mountain plutonic assemblage. Early descriptions (early to mid-1970s) of the Evelyn Lee prospect described chalcopyrite, bornite, and pyrite in isolated skarn bodies that occur in marble in the Skajit Limestone near or at the contact with Devonian hornblende granodiorite porphyry. Skarn bodies were reported to be as much as 100 m long and 10 m wide. Copper grades as high as 10 percent Cu were obtained from outcrops. Altered and pyritized meta-granodiorite bodies are spatially asso-

ciated with the mineralized skarns.

Mineralization on the property has been described by Ventures Resource Corp. as consisting of pyrite, chalcopyrite, and bornite with silver and gold found in metamorphosed VMS, skarn, and sheared granitic-hosted deposits. Ventures Resource considers the target model for this prospect to be copper-gold skarn mineralization related to copper porphyry-type intrusives. The host rocks are volcanogenic calc-schist, chloritic calc-schist, limestone and dolomite, and intensely sheared granitic intrusive. Structurally, the host rocks form a broad syncline intruded along the keel by granodiorite. Assays include grades of 9.9 percent Cu and 8.17 ounces of silver per ton from a 7-foot-thick zone of sulfides in skarn, and a 5-foot surface sample which grades 5.6 percent Cu and 0.04 ounce of gold per ton. A core sample assayed 3.5 percent Cu over a 23.5-foot drill intercept.

**Alteration:**

Potassic and sericitic alteration in the meta-igneous rocks. Calc-silicate hornfels.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Porphyry Cu, skarn-related deposits (Cox and Singer, 1986; model 18a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18a

**Production Status:** None

**Site Status:** Active

**Workings/exploration:**

Claims were staked in 1969 and 1970. The property was selected by Doyon, Limited (an Alaska Native Corporation) in the early 1970s as part of Alaska Native Claims Settlement Act (ANCSA) settlement. In 1998 the Evelyn Lee property was being explored by Ventures Resource Corporation under the terms of an exploration agreement with the owner, Doyon, Limited. Sampling results from a large soil sample grid (approximately 5,000 feet x 2,500 feet ) shows extensive areas of more than 500 ppm Cu in soil (Ventures Resource Corporation, 1998). A grade 9.9 percent Cu and 8.17 ounces of Ag per ton of was obtained from sampling of a 7-foot-thick sulfide layer in skarn. Two shallow core drill holes have explored one of the copper soil anomalies. This drilling encountered mineralization that assayed 3.5 percent copper from surface to 23.5 feet and 2 percent copper from surface to 18 feet.

**Production notes:**

**Reserves:**

Estimates of potential for this property ranges from about 1 million metric tons of 5 per-

cent Cu (DeYoung, 1978) to 'tens of million of tons grading 2 percent to 5 percent Cu with gold and silver credits' (Ventures Resource Corporation website, 1998, URL <http://www.venturesresource.com/>).

**Additional comments:**

See also: Venus (CH065), Victor (CH064), Eva (CH063), and Geroe Creek (CH053) prospects. Alaska Kardex No. KX-31-53H (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Grybeck, 1977; DeYoung, 1978; Marsh and Wiltse, 1978; Adams and Dillon, 1985; Newberry and others, 1986; Nokleberg and others, 1987; Maas, 1987 (USBM OFR 10-87); Adams and Dillon, 1988; Nokleberg and others, 1988; Nokleberg and others, 1993; Nokleberg and others, 1996; Newberry and others, 1997; Ventures Resource Corporation, 1998 (<http://www.venturesresource.com/>).

**Primary reference:** Ventures Resource Corporation, 1998

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Ginger****Site type:** Prospect**ARDF no.:** CH060**Latitude:** 67.71**Quadrangle:** CH C-5**Longitude:** 149.28**Location description and accuracy:**

This site is at an elevation of about 4,550 feet on the ridge between Big Spruce Creek and Sheep Creek (NE1/4 sec. 11, T. 33 N., R. 8 W., of the Fairbanks Meridian) approximately 5 miles northwest of Horace Mountain. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Cu**Other:****Ore minerals:** Chalcopyrite, magnetite, pyrite**Gangue minerals:****Geologic description:**

The Ginger prospect is one of a number of skarn prospects in the Chandalar area. Published information specific to the geology of individual skarns is scarce. Early reports described the Ginger prospect as copper sulfides and/or malachite-azurite stains in a thrust fault-bounded block of Skajit Limestone, along with isolated tactite bodies containing less than 0.2 percent Cu. Later descriptions by Newberry and others (1986) included the Ginger prospect in a group of skarn deposits northwest of a belt of Devonian(?) granitic rocks informally named the Horace Mountain plutons. Many of these skarns exhibit both garnet/pyroxene prograde and epidote/actinolite retrograde mineral assemblages. Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns tend to place them in the category of continental-margin, porphyry-related copper skarns. A notation on the Newberry and others (1986) prospect location map classified the Ginger prospect as a Cu-Ag skarn. The prospect is located in an area mapped by Dillon and others (1996) as Devonian tactite and Devonian aplite (a component of the Horace Mountain plutonic assemblage), within a more extensive terrane of phyllite and marble. Newberry and others (1986) described the mineralogy of a hand specimen from this prospect as epidote, actinolite, chalcopyrite, pyrite and magnetite and the metal content as 7.8 percent Cu and 57 ppm Ag. In a listing posted on the Ventures Resource Corporation (currently exploring Doyon lands in the area under an exploration agreement with Doyon, Limited)

website (URL <http://www.venturesresource.com/>), the Ginger prospect is noted as a Cu prospect.

**Alteration:**

Calc-silicate.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits (Cox and Singer, 1986; model 18b)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b

**Production Status:** None

**Site Status:** Not determined

**Workings/exploration:**

Eight lode claims staked in 1969-70.

**Production notes:****Reserves:****Additional comments:**

See also: Evelyn Lee (CH059), Hurricane-Diane (CH062), and Luna (CH101). Alaska Kardex No. 031-53H (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Adams and Dillon, 1985; Newberry and others, 1986; Nokleberg and others, 1987; Maas, 1987 (USBM OFR 10-87); Adams and Dillon, 1988; Newberry and others, 1997.

**Primary reference:** Newberry and others, 1986

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Deimos****Site type:** Prospect**ARDF no.:** CH061**Latitude:** 67.72**Quadrangle:** CH C-5**Longitude:** 149.23**Location description and accuracy:**

The Deimos prospect is at an elevation of about 4,300 feet just west of the upper reaches of Sheep Creek (SE1/4 sec. 36, T. 34 N., R. 8 W. and SW1/4 sec. 31, T. 34 N., R. 7 W., of the Fairbanks Meridian) approximately 6 miles north-northwest of the confluence of Sheep Creek and Robert Creek. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Cu**Other:** Ag(?)**Ore minerals:** Chalcopyrite, magnetite, pyrite**Gangue minerals:** Epidote, garnet**Geologic description:**

The Deimos prospect is one of a number of skarn deposits in the Chandalar area which have been described in general by Newberry and others (1986). These skarns are all northwest of a belt of Devonian(?) granitic rocks informally named the Horace Mountain plutons. Many exhibit both prograde and retrograde mineral assemblages. Newberry and others (1986) stated that their mineralogy, mineralization, and alteration place them in the category of continental-margin, porphyry-related copper skarns. Published information about the geology of individual skarns is scarce, but brief descriptions of the prospect by Newberry and others (1986) indicated that the Deimos prospect is a Cu-Ag skarn. Based on a hand specimen description (Newberry and others, 1986), the skarn contains garnet, epidote, chalcopyrite, and pyrite. Analysis of the hand specimen returned a value of 1.9 percent Cu. In a listing posted on the Ventures Resource Corporation (currently exploring Doyon lands in the area under an agreement with Doyon, Limited) website (URL <http://www.venturesresource.com/>), the Deimos prospect is classified as a Cu-Au prospect, although there are no data supporting the presence of appreciable gold.

**Alteration:**

Calc-silicate.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits (Cox and Singer, 1986; 18b)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b

**Production Status:** None**Site Status:** Not determined**Workings/exploration:**

Surface sampling.

**Production notes:****Reserves:****Additional comments:**

See also: Io (CH102), Ginger (CH060), Hurricane-Diane (CH062), Venus (CH065), Pilgrim (CH099), Mike (CH100), Vicki (CH097), Cindy (CH098), and Evelyn Lee (CH059).

**References:**

Newberry and others, 1986; Newberry and others, 1997; Ventures Resource Corporation, 1998 (<http://www.venturesresource.com/>).

**Primary reference:** Newberry and others, 1986**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Hurricane-Diane****Site type:** Prospect**ARDF no.:** CH062**Latitude:** 67.74**Quadrangle:** CH C-5**Longitude:** 149.16**Location description and accuracy:**

This site is at an elevation of about 4,200 feet approximately 5 1/2 miles north of Horace Mountain and a mile east of the head of Sheep Creek (secs. 28, 29, T. 34 N., R. 7 W., of the Fairbanks Meridian). The reference point is near the center of a mile-long northeast-trending zone of mineral occurrences. This zone constitutes the Hurricane-Diane prospect. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Cu**Other:****Ore minerals:** Chalcopyrite**Gangue minerals:****Geologic description:**

The Hurricane-Diane prospect is one of a number of copper occurrences that comprise the Chandalar copper belt. Information describing the geology of individual prospects generally is scarce. Early descriptions (Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983) combined this prospect with the Luna prospect (CH101). Together they were described as small skarn-hosted chalcopyrite deposits in Devonian Skajit Limestone intruded by a small greenstone-greenschist body (Cobb and Cruz, 1983). Later information has shown that they are distinct deposits. Newberry and others (1986) included them in a group of skarn deposits northwest of and related to the Devonian(?) Horace Mountain granitic plutons. Many of these skarns exhibit both garnet and pyroxene prograde and epidote and actinolite retrograde mineral assemblages, and Newberry and others (1986) stated that their mineralogy, mineralization, and alteration tend to place them in the category of continental-margin, porphyry-related copper skarns. Newberry and others (1986) noted that the Hurricane-Diane prospect is a Cu-Zn-Pb skarn, which suggests that it is a distal occurrence within the belt. Because the Zn and Pb values are nominal, however (see below), Newberry and others (1997) have classified the Hurricane prospect as a calcic Cu skarn. Ventures Resource Corporation (currently exploring Doyon, Limited lands in the area under an agreement with Doyon, Limited) classifies the Hurricane-Diane prospect as

a copper prospect (URL <http://www.venturesresource.com/>). A hand-specimen description (Newberry and others, 1986) showed the mineralogy of the skarn to be principally garnet, epidote, actinolite, chalcopyrite, pyrite, and magnetite. The epidote-actinolite is described as part of a crosscutting retrograde assemblage. An analysis of the hand specimen gave values of 1.6 percent Cu, 105 ppm Ag, 0.2 percent Zn and 0.07 percent Pb. The prospect is in an area mapped by Dillon and others (1996) as principally Devonian Skajit Limestone, Ordovician black phyllite and marble, and Ordovician to Cambrian(?) calcareous-chlorite-quartz schist and quartzite. These units are intruded by Devonian aplite, a component of the Horace Mountain plutonic assemblage, and their contact-related tactite and calcareous hornfels presumably host the skarn mineralization.

**Alteration:**

Contact metasomatic.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits (Cox and Singer, 1986; model 18b)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Claims staked from 1967 to 1973 lapsed in 1977, and the land was acquired by Doyon, Limited via its Alaska Native Claims Settlement Act selections. Surface exploration only.

**Production notes:****Reserves:****Additional comments:**

This prospect is approximately 3 miles south-southwest of the Luna prospect (CH0101). See also: Luna (CH101), Gayle (CH091), Ginger (CH060), and Evelyn Lee (CH059). Alaska Kardex No. 00-31-53B (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Adams and Dillon, 1985; Newberry and others, 1986; Maas, 1987 (USBM OFR 10-87); Adams and Dillon, 1988; Ventures Resource Corporation, 1998 (<http://www.venturesresource.com/>); Newberry and

others, 1997.

**Primary reference:** Newberry and others, 1986

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Eva

**Site type:** Prospect

**ARDF no.:** CH063

**Latitude:** 67.65

**Quadrangle:** CH C-5

**Longitude:** 149.41

**Location description and accuracy:**

The Eva prospect is at an elevation of about 4,500 feet in the hills between Big Spruce Creek and Mathews River (NW1/4 sec. 32, T. 33 N., R. 8 W., of the Fairbanks Meridian). It is approximately 10 miles north of the Big Lake (site) and 1 mile northwest of the Victor prospect (CH064). The Eva prospect was part of a larger claim group that also encompassed the Victor and Venus (CH065) prospects. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:** Ag(?), Au(?)

**Ore minerals:** Chalcopyrite, magnetite(?), pyrite

**Gangue minerals:**

**Geologic description:**

The Eva prospect is one of several Cu skarn deposits in the Chandalar area which have been described in general by Newberry and others (1986). They are all northwest of a belt of Devonian(?) granitic rocks informally named the Horace Mountain plutons. Many of these Cu skarns exhibit both prograde garnet and pyroxene and retrograde epidote and actinolite mineral assemblages. Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns tend to place them in the category of continental-margin, porphyry-related copper skarns.

Published descriptions of individual prospects in this group are scarce. Some of the descriptions of the Eva prospect include it with the nearby Victor and Venus prospects (DeYoung, 1978; Cobb and Cruz, 1983). The Venus prospect in particular is characterized by porphyry-related mineralization, and the Eva prospect thus has been characterized as a porphyry copper and (or) copper skarn deposit (Cobb and Cruz, 1983). Newberry and others (1986), however, classified it as a Cu skarn. Dillon (1996) mapped the prospect area principally as Devonian hornblende granodiorite gneiss of the Horace Mountain pluton and contact-related tactite and calcareous hornfels. Outcrop areas of pyritized meta-granodiorite intrusives near the Eva prospect are smaller than those at either the nearby

Victor or Venus prospects. The limited information available suggests that the principal deposit at the Eva prospect is a copper-bearing garnet and pyroxene skarn. Unlike the Venus prospect, there is little evidence at the Eva prospect that suggests appreciable copper mineralization in the intrusive rocks. Although the distribution of copper in the metaigneous rocks and the related skarns is unclear, the available published information suggests that copper is more abundant in the skarns. Nicholson (1990) noted that some workers have characterized the mineralization in the Big Spruce Creek area as volcanogenic in origin, although this model is not widely accepted.

**Alteration:**

Propylitic and sericitic alteration of the meta-granodiorite and retrograde epidote/actinolite alteration of the skarns.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Porphyry Cu, skarn-related deposits (Cox and Singer, 1986; model 18a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18a

**Production Status:** None

**Site Status:** Not determined

**Workings/exploration:**

Surface sampling only.

**Production notes:****Reserves:****Additional comments:**

See also: Victor (CH064), Venus (CH065), and Evelyn Lee (CH059). Much of the published information on the Eva prospect is combined with descriptions of the Venus and Victor prospects. The land (and presumably the original claims) have been acquired by Doyon, Limited via its Alaska Native Claims Settlement Act selections. Bornite and chalcopyrite sightings have been reported in cliffs along Mathews River (DeYoung, 1978, loc. 72). They may be related to the Eva prospect.

**References:**

DeYoung, 1978; Cobb and Cruz, 1983; Newberry and others, 1986; Nicholson, 1990; Ventures Resource Corporation, 1998 (<http://www.venturesresource.com/>); Newberry and others, 1997.

**Primary reference:** Nicholson, 1990

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Victor****Site type:** Prospect**ARDF no.:** CH064**Latitude:** 67.63**Quadrangle:** CH C-5**Longitude:** 149.38**Location description and accuracy:**

The Victor prospect is at an elevation of about 4,300 feet in the hills between Big Spruce Creek and Mathews River. It is approximately 8 miles north-northeast of the north end of Bob Johnson Lake (formerly Big Lake) and 4 miles northwest of the confluence of Big Spruce Creek and Bettles River (NW1/4 sec. 5, T. 32 N., R. 8 W. and SE1/4 sec. 32, T. 33 N., R. 8 W., of the Fairbanks Meridian). The Victor prospect was part of a large claim group that encompassed the Venus (CH065) and Eva (CH063) prospects, and the Victor prospect is approximately 1 1/2 miles west of the Venus prospect. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Cu**Other:** Au(?)**Ore minerals:** Bornite(?), chalcopyrite, magnetite, molybdenite; (chalcocite and digenite in skarn)**Gangue minerals:** Quartz**Geologic description:**

The Victor and Venus (CH065) prospects both are in a terrane of altered Devonian(?) meta-granodiorite and contact-related garnet-pyroxene skarns developed in adjacent marbles and calc-schists. Alteration of the meta-granodiorite at Venus appears to be more intense than at Victor, which is characterized by propylitic and sericitic, but not potassic, alteration (Nicholson, 1990). Mineralization at the Victor prospect apparently is more prevalent in the skarns than in the meta-igneous rocks (Nicholson, 1990). Minerals in the skarns are retrograded and have been sketchily described as garnet, clinopyroxene, actinolite, epidote, calcite, quartz, chlorite, chalcopyrite, plus or minus bornite?, and pyrite (Nicholson, 1990). A hand specimen from the Victor prospect, described in Newberry and others (1986), yielded values of 1.1 percent Cu, 5.5 ppm Ag, less than 0.14 ppm Au, and negligible Pb and Zn. Young and others (1997) reported that hundreds of meters (presumably in drill intercepts) with grades of 0.1 to 0.6 percent Cu have been found on the property, with some values as high as 5.5 percent Cu, 150 ppm Mo, and 0.41 ppm Au.

Nicholson (1990) noted that some workers have characterized the mineralization in the Big Spruce Creek area as volcanogenic in origin. Although Young and others (1997) discuss the Victor prospect as a porphyry copper deposit, their comments may more broadly encompass the Victor-Venus-Eva prospects.

**Alteration:**

Propylitic and sericitic alteration in Devonian(?) meta-granodiorite. Associated skarns exhibit retrograde alteration related to proximity to the altered intrusives.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996)

**Deposit model:**

Porphyry Cu, skarn-related deposits(?) (Cox and Singer, 1986; model 18a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18a(?)

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

At least 23 claims staked from 1967 to 1970.

**Production notes:****Reserves:**

Nicholson (1990) estimated that skarn pods at Victor and Eva contain 50,000 tons of 2 percent Cu. She notes that comparisons with tonnages of other porphyry copper-related skarns and the presence of extensive calcareous rocks in the area suggest appreciable undiscovered skarn mineralization. Young and others (1997) give a range of 74,000 tons to 4.56 million tons as an aggregate resource figure.

**Additional comments:**

See also: Venus (CH065), Eva (CH063), and Evelyn Lee (CH059) prospects. Most of the publications describing this area provide a combined description of the Venus-Victor-Eva prospects. The land (and presumably the original claims) have been acquired by Doyon, Limited via its Alaska Native Claims Settlement Act selections. Bornite and chalcopyrite reportedly have been sighted in cliffs along Mathews River (DeYoung, 1978, loc. 72). That mineralization is possibly on the Victor and/or Eva prospects.

**References:**

Grybeck, 1977; DeYoung, 1978; Arctic Environmental Information and Data Center, 1982; Cobb and Cruz, 1983; Newberry and others, 1986; Nokleberg and others, 1987;

Nokleberg and others, 1988; Nicholson, 1990; Nokleberg and others, 1993; Nokleberg and others, 1996; Ventures Resource Corporation, 1998 (<http://www.venturesresource.com/>); Young and others, 1997; Newberry and others, 1997.

**Primary reference:** Nicholson, 1990

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Venus

**Site type:** Prospect

**ARDF no.:** CH065

**Latitude:** 67.63

**Quadrangle:** CH C-5

**Longitude:** 149.32

**Location description and accuracy:**

The Venus prospect is centered about 3 1/4 miles north-northwest along Big Spruce Creek from its confluence with the Bettles River (NW1/4 sec. 3 and NE1/4 sec. 4, T. 32 N., R. 8 W. and sec. 34, T. 33 N., R. 8 W., of the Fairbanks Meridian) and 11 miles east-northeast of Sukakpak Mountain. The Venus prospect is part of a large claim group (now inactive?) that also encompasses the Victor (CH064) and Eva (CH063) prospects. The location of the reference point is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Au, Cu

**Other:** Mo

**Ore minerals:** Bornite(?), chalcopyrite, magnetite, molybdenite, pyrite

**Gangue minerals:** Epidote

**Geologic description:**

The Venus prospect is generally described as a porphyry copper deposit associated with Cu-Au-Ag skarns (Cobb and Cruz, 1983, Nokleberg and others, 1987). The skarn occurrences at Venus, along with a number of other skarn prospects in the Chandalar district, were described in general by Newberry and others (1986), who noted that many of them exhibit both prograde and retrograde mineral assemblages and that their mineralogy, mineralization, and alteration classify them as continental-margin, porphyry-related copper skarns. Nicholson (1990) noted that some workers have suggested that some of the prospects in the area may have volcanogenic affinities. The local geology at Venus is described by Ventures Resource Corporation (1998) as an elongated, altered and foliated granodiorite pluton bounded on the east by overthrust Skajit Limestone and on the west by Skajit Limestone and gray phyllite, felsic calc-schist, and chloritic schist.

The porphyry mineralization at Venus consists of disseminations and fracture fillings of pyrite, chalcopyrite, and minor molybdenite in schistose Devonian meta-granodiorite porphyry. The meta-granodiorite porphyry is extensively propylitically altered and pyritized (2 percent to 3 percent pyrite), along with restricted zones of sericitic to potassic alteration. The intrusive hosted mineralization grades approximately 0.1 percent to 0.2 percent

Cu and generally less than 0.01 ounce of gold per ton (Ventures Resource Corporation, 1998). A hand specimen described by Newberry and others (1986) as porphyry contains quartz, sericite, pyrite, chalcopryrite, chlorite, and molybdenite. An analysis of the hand specimen returned 0.38 percent Cu, 1 ppm Ag, less than 0.1 ppm Au, 0.002 percent Zn, and 0.001 percent Pb.

The skarn mineralization is massive pyrite-chalcopryrite. The skarns are in Devonian Skajit Limestone and calc-schists adjacent to, and as xenoliths within, the meta-intrusives. The skarns are principally garnet-magnetite-diopside bodies displaying retrograde vein and replacement epidote-amphibole-chlorite-calcite-quartz. Mineralization in the skarns is variable but generally runs 1.5 percent to 6 percent Cu, less than 0.01 ounce of gold per ton, and as much as about 1 ounce of silver per ton (Newberry and others, 1986; Nicholson, 1990; Ventures Resource Corporation, 1998). The mineralogy of a skarn hand specimen described by Newberry and others (1986) includes garnet, magnetite, chalcopryrite, pyrite, epidote, actinolite, serpentine and talc. An analysis of this hand specimen returned 2.0 percent Cu, 14.5 ppm Ag, 0.14 ppm Au, 0.014 percent Zn, and 0.002 percent Pb.

**Alteration:**

Extensive propylitic alteration, along with restricted areas of sericitic to potassic alteration in meta-intrusives, and hornfels and skarn in adjacent calcareous rocks.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Porphyry Cu and Cu porphyry skarn-related deposits (Cox and Singer, 1986; models 17 and 18a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

17 and 18a

**Production Status:** None**Site Status:** Active**Workings/exploration:**

Initial claim block was staked from 1967 to 1970 by Bear Creek Mining (Kennecott). Their exploration programs from 1970 to 1974, directed toward evaluating the porphyry copper potential, included 2,465 feet of diamond drilling in five diamond drill holes (all in meta-intrusives) in 1973-1974. Information posted on the Ventures Resource Corporation website (URL <http://www.venturesresource.com/>) in 1998 describes a 2,000-foot x 7,000-foot geochemical soil survey grid on the property with Cu values greater than 100 ppm and maximum values greater than 2,000 ppm, extending over several thousand feet (Ventures Resource Corporation, 1998). Reconnaissance exploration was reported in 1983, 1990-1991, and 1996.

**Production notes:****Reserves:**

Reserve estimates made on very limited data for the porphyry mineralization range from 300,000 tons of 0.3 percent Cu (Nicholson, 1990) to a potential resource of 495 million pounds of Cu (Ventures Resource Corporation, 1998). In general, the Cu deposits discovered to date in the Chandalar quadrangle have been characterized by relatively small tonnages in high-grade deposits and low grades in disseminated deposits.

**Additional comments:**

See also: Victor (CH064), Evelyn Lee (CH059), Eva (CH063), and Geroe Creek (CH053). Most of the publications describing this area provide a combined description of the Venus-Victor-Eva prospects. The land (and presumably the original claims) have been acquired by Doyon, Limited via its Alaska Native Claims Settlement Act selections. Alaska Kardex No. 031-53D (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Grybeck, 1977; DeYoung, 1978; Environmental Information and Data Center, 1982; Cobb and Cruz, 1983; Adams and Dillon, 1985; Maas, 1987 (USBM OFR 10-87); Newberry and others, 1986; Nokleberg and others, 1987; Adams and Dillon, 1988; Nokleberg and others, 1988; Nicholson, 1990; Nokleberg and others, 1993; Nokleberg and others, 1996; Ventures Resource Corporation, 1998; Newberry and others, 1997.

**Primary reference:** Ventures Resource Corporation, 1998

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Limestone Creek****Site type:** Occurrence**ARDF no.:** CH066**Latitude:** 67.60**Quadrangle:** CH C-5**Longitude:** 149.38**Location description and accuracy:**

This site is at an elevation of about 3,500 feet approximately 6 miles north-northeast of the north end of Bob Johnson Lake (formerly Big Lake) and 1/2 mile east of the head of Limestone Creek, a south-flowing tributary to the Bettles River (sec. 17, T. 32 N., R. 8 W., of the Fairbanks Meridian). The reference point for this site is the same as that for loc. 37 in DeYoung (1978). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Ag, Ni, Pd**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

Nickel, palladium, and silver were reported in an X-ray analysis of rock from a thrust sheet of Skajit Limestone (Brosgé and Reiser, 1964). The occurrence is in a section of Skajit Limestone that has overridden Devonian(?) quartz muscovite schist along a major northeast-trending thrust fault. A later examination of the occurrence (Foley and others, 1989) found no evidence of anomalous nickel, palladium, and silver. Heiner and Wolff (1968) described Limestone Creek as a placer gold occurrence on which one claim was located in 1954, but inactive since then. There are no other reports or any evidence to substantiate that this site was a placer gold occurrence.

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

This is the only report of platinum-group metals in the Chandalar quadrangle. The actual presence of platinum-group metals, however, is questionable.

**References:**

Brosgé and Reiser, 1964; Heiner and Wolff, 1968; DeYoung, 1978; Foley and others, 1989.

**Primary reference:** Foley and others, 1989

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Mule Creek****Site type:** Mine**ARDF no.:** CH067**Latitude:** 67.60**Quadrangle:** CH C-5**Longitude:** 149.35**Location description and accuracy:**

Mule Creek is a small south-flowing tributary to the Bettles River. Its mouth is approximately 4 1/2 miles northeast of the north end of Bob Johnson Lake (formerly Big Lake). The exact location of the placer workings along Mule Creek is unclear. Maddren (1913) stated that good prospects were found 2 1/2 and 1 1/2 miles above the mouth, but that shafts nearer the mouth did not reach bedrock or find gold. The reference point is thus plotted approximately 2 miles above the mouth (sec. 16, T. 32 N., R. 8 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:** Ag, Cu**Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Mule Creek is one of several tributaries to the Bettles River in this area that are reported either to have produced gold or to have good prospects. Maddren (1913) described good prospects 2 1/2 and 1 1/2 miles upstream from the mouth of Mule Creek. At 2 1/2 miles, there is a low bench in 8 feet of gravel; at 1 1/2 miles, gold was found in 2 feet of gravel which yielded \$1 per man-hour. Maddren also noted small nuggets of native silver and native copper nuggets as heavy as 7 pounds on Mule Creek. Reed (1938) reported that the gravel was coarse and waterworn, with many large boulders, and that depth to bedrock was 3 to 8 feet. The gold is on bedrock and in the lowest foot of gravel; it is well worn and has a fineness of 908. Values of approximately 10 cents per square foot of bedrock were reported in 1938. Mule Creek heads in limestone. Dillon and others (1996) map this limestone as Devonian Skajit Limestone, which is in contact with Ordovician to Cambrian(?) calc-schist and Ordovician phyllite and marble.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Inactive

**Workings/exploration:**

Mule Creek was mined sporadically in the early 1900s and was being worked in 1937 by booming and shoveling in (Reed, 1938). Several shafts 75 to 80 feet deep near the alluvial fan at the mouth of the creek were flooded before reaching bedrock.

**Production notes:**

Maddren (1913) estimated \$1,000 of Au produced from 1900 to 1909.

**Reserves:****Additional comments:**

Reed (1938) pointed out that Maddren (1913) incorrectly identified Spruce Creek as Mule Creek and that Mule Creek was unnamed.

**References:**

Maddren, 1910; Maddren, 1913; Reed, 1938; Heiner and Wolff, 1968; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983.

**Primary reference:** Maddren, 1913

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Spruce Creek; Big Spruce Creek

**Site type:** Occurrence

**ARDF no.:** CH068

**Latitude:** 67.59

**Quadrangle:** CH C-5

**Longitude:** 149.30

**Location description and accuracy:**

Spruce Creek (named Big spruce Creek on modern topographic maps) is a large, south-flowing tributary to the Bettles River. Its confluence with the Bettles River is approximately 7 miles northeast of Big Lake (site), from which point it extends more than 12 miles to the north. Placer gold prospects on Spruce Creek have been reported near its mouth and further upstream. The ones upstream reportedly were promising; the ones near the mouth were not. Because the upstream locations are not described in any detail, the reference point has been plotted on Spruce Creek near its mouth (sec. 22, T. 32 N., R. 8 W., of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

There is little information about this occurrence. Reed (1938) reported little or no gold in two shafts about 45 feet deep along the right limit of the Spruce Creek valley near its mouth. Better prospects farther upstream were reported in the early 1900s (Reed, 1938), but their locations are not known. The creek traverses the Horace Mountain plutons and the Chandalar copper belt.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Prospecting in the early 1900s included two shafts about 45 feet deep near the mouth of Spruce Creek, and there were reports of prospecting farther upstream. Some claims reportedly were staked in 1953.

**Production notes:****Reserves:****Additional comments:**

Reed (1938) pointed out that Maddren (1913) incorrectly identified Spruce Creek as Mule Creek and that Mule Creek was unnamed.  
Alaska Kardex No. 031-005 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Maddren, 1910; Maddren, 1913; Reed, 1938; Heiner and Wolff, 1968; Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Reed, 1938**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Gus Creek****Site type:** Occurrence**ARDF no.:** CH069**Latitude:** 67.59**Quadrangle:** CH C-5**Longitude:** 149.27**Location description and accuracy:**

Gus Creek (Shady Creek on the modern topographic map) is a small, north-flowing tributary to the Bettles River. The reference point is plotted near the mouth of Gus Creek (sec. 23, T. 32 N., R. 8 W., of the Fairbanks Meridian), although the exact location of the prospect is not known. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1938) reported only fair prospects on Gus Creek. He described the creek as flowing through a limestone canyon on its lower end, but widening with bedrock changing to schist about 1/4 mile above the mouth. Dillon and others (1996) mapped the geology of the lower mile of the creek as Ordovician to Cambrian marble and two small bodies of Devonian biotite granite gneiss that are part of the Baby Creek batholith. A Devonian calcareous hornfels surrounds one of the granitic bodies. Rocks adjacent to the upper portion of the creek are mapped as Ordovician to Cambrian(?) feldspar-quartz schist.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Reports of prospecting in the 1930s.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Garnet Creek (CH071).

**References:**

Reed, 1938.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Eightmile Creek****Site type:** Prospect**ARDF no.:** CH070**Latitude:** 67.57**Quadrangle:** CH C-5**Longitude:** 149.38**Location description and accuracy:**

Reference point is at the mouth of Eightmile Creek (sec. 29, T. 32 N., R. 8 W., of the Fairbanks Meridian) where some mining reportedly has occurred. Eightmile Creek joins the Bettles River about 4 miles northeast of the north end of Bob Johnson Lake (formerly Big Lake). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:** Hg**Ore minerals:** Cinnabar, gold**Gangue minerals:****Geologic description:**

Eightmile Creek is one of several tributaries to the Bettles River in which placer gold has been reported. Little descriptive information is available for this creek, but Reed (1938) reported that very good prospects had been found and that mining had occurred near the mouth in the early 1900s. Joesting (1943) reported placer cinnabar on this creek. Reed (1938) reported schist bedrock near the mouth of the creek, but Dillon and others (1996) mapped Ordovician black phyllite and marble near the mouth and Ordovician to Cambrian(?) quartz-feldspar schist farther upstream.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Not determined

**Workings/exploration:**

Heiner and Wolff (1968) reported that the creek had been worked in the 1950s.

**Production notes:**

Reports of mining before 1938.

**Reserves:**

**Additional comments:**

Alaska Kardex No. 031-4 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Maddren, 1910; Maddren, 1913; Reed, 1938; Joesting, 1943; Roehm, 1949 (IR 31-1); Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Garnet Creek****Site type:** Mine**ARDF no.:** CH071**Latitude:** 67.56**Quadrangle:** CH C-5**Longitude:** 149.39**Location description and accuracy:**

Garnet Creek is a north-flowing tributary to the Bettles River. It joins the Bettles River approximately 4 miles north-northeast of Big Lake (site on Bob Johnson Lake). The reference point is at about the midpoint of mining activity that extended from the mouth to the forks (sec. 32, T. 32 N., R. 8 W., of the Fairbanks Meridian). The area mined is probably along the creek within about one mile of the reference point. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Garnet Creek is one of several tributaries to the Bettles River in which placer gold has been reported. The gold is in the present channel of the creek from the mouth to the forks, mostly on schist bedrock, but also in the lower few feet of the gravel (Reed, 1938). The gravel is coarse and waterworn, with many large boulders. The gravel is about 8 feet thick near the mouth of the creek and thins to 1 to 3 feet thick 1/2 mile from the mouth. Ground near the mouth of the creek was mined in 1937 and said to run \$0.77 per square foot of bedrock (0.022 oz Au) (Reed, 1938). The gold was fairly fine, with a few nuggets. Reed (1938) reported the presence of a high channel, but it had not been prospected to any extent at that time. Reed (1938) described the bedrock in Garnet Creek as schist. Dillon (1996) mapped Ordovician black phyllite and marble near the mouth and Ordovician to Cambrian(?) quartz-feldspar and calcareous schists farther upstream.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes

**Site Status:** Not determined

**Workings/exploration:**

Surface mining reported in 1937. Claims were staked in 1959.

**Production notes:**

Production from 1900 to 1909 was reported to yield \$7 to \$9 per man-day and totaled \$1,000 (Maddren, 1913).

**Reserves:****Additional comments:**

Gold fineness reported to be 872.

**References:**

Maddren, 1910; Maddren, 1913; Reed, 1938; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Dillon, 1982; Cobb and Cruz, 1983.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Bettles River Canyon****Site type:** Mine**ARDF no.:** CH072**Latitude:** 67.56**Quadrangle:** CH C-5**Longitude:** 149.42**Location description and accuracy:**

This site is about 1/4 mile below the confluence of Garnet Creek and the Bettles River and represents placer mining activity documented along the Bettles River from just below the mouth of Garnet Creek to the mouth of Mule Creek. The reference point is at the lower end of this activity (secs. 30, 31, T. 32 N., R. 8 W., of the Fairbanks Meridian).

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Whereas most of the placer mining along the Bettles River has been on its tributaries, Reed (1938) documented drift mining along the Bettles River from just below Garnet Creek to the mouth of Mule Creek. The depth to bedrock was 14 to 16 feet and the ground apparently ran about \$0.50 per square foot of bedrock (1937). The U.S. Bureau of Mines (1973) also showed that there is evidence of placer mining along the Bettles River as far up as the mouth of Mule Creek.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes

**Site Status:** Not determined

**Workings/exploration:**

Some drift mining and a few prospect shafts, mostly in the early in the 1900s.

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Reed, 1938; U.S. Bureau of Mines, 1973; Dillon, 1987

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Last Chance Creek; Crab Creek

**Site type:** Occurrence

**ARDF no.:** CH073

**Latitude:** 67.52

**Quadrangle:** CH C-5

**Longitude:** 149.47

**Location description and accuracy:**

The reference point for this occurrence is on Last Chance Creek (NE1/4 sec. 14, T. 31 N., R. 9 W., of the Fairbanks Meridian) approximately 1 mile north of Big Lake(site) on Bob Johnson Lake. The location is accurate within a 1-mile radius. Also see Additional comments.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Prospecting in 1922 yielded two grains of coarse gold at the bottom of a 30-foot-deep prospect shaft (Reed, 1938). Additional prospecting in 1932 yielded one grain of gold (said to be worth \$0.05) from a 4-foot open cut near where the stream valley opens into the valley of Lake Creek. No other data are available for this occurrence.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Last Chance Creek was prospected by at least three shafts to bedrock and an open cut. A 30-foot shaft was sunk in 1922 and 15-foot and 35-foot shafts were sunk in 1932. The 15-foot shaft reportedly was near the mouth of the creek and the 35-foot shaft was farther up-stream 'at the forks'. Claims have been staked on Last Chance Creek since 1969, but there are no reports of any work.

**Production notes:**

**Reserves:**

**Additional comments:**

Prospect was called Crab Creek by Reed (1938), but it is called Last Chance Creek on the modern topographic map.

**References:**

Reed, 1938; Cobb, 1976 (OFR 76-340); Cobb and Cruz, 1983 ; DeYoung, 1978.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Mathews River****Site type:** Occurrence**ARDF no.:** CH074**Latitude:** 67.66**Quadrangle:** CH C-6**Longitude:** 149.50**Location description and accuracy:**

The Mathews River occurrence is at an elevation of 3,600 feet on the northeast flank of Wiehl Mountain (sec. 26, T. 33 N., R. 9 W., of the Fairbanks Meridian) approximately 7 miles northeast of Sukakpak Mountain. The reference point is taken from the location shown as loc. 46 in DeYoung (1978). It should be noted that the location shown in Cobb (1972, MF 457) is approximately 1/2 mile northwest of the DeYoung (1978) location; the location is accurate within a 1-mile radius.

**Commodities:****Main:** Au, Pb**Other:** Ag, Cu, Zn**Ore minerals:** Arsenopyrite, chalcopyrite, galena, gold, sphalerite**Gangue minerals:** Quartz**Geologic description:**

Early reports on this prospect described only galena in Devonian(?) greenstone and greenschist near a contact with Devonian siltstone and grit (Brosge and Reiser, 1964). Later reports described the occurrence as a 3-foot-wide quartz vein exposed for 100 feet along strike (Mulligan, 1974). No sulfides were seen in place, but iron-stained quartz float found just below the vein contained small amounts of arsenopyrite, galena, chalcopyrite, and sphalerite. Analysis showed 3.4 ppm gold and trace silver.

**Alteration:****Age of mineralization:****Deposit model:**

Low-sulfide Au-quartz veins(?) (Cox and Singer, 1986; model 36a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

36a(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Mulligan, 1974; Cobb, 1976; Grybeck, 1977; DeYoung, 1978; U.S. Bureau of Mines, 1978; Dillon, 1982.

**Primary reference:** Mulligan, 1974

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Wiehl Mountain****Site type:** Occurrence**ARDF no.:** CH075**Latitude:** 67.62**Quadrangle:** CH C-6**Longitude:** 149.64**Location description and accuracy:**

The Wiehl Mountain occurrence is low on the west flank of Wiehl Mountain approximately 3 1/4 miles southeast of the confluence of the Bettles and Middle Fork Koyukuk rivers (NE1/4 sec. 7, T. 32 N., R. 9 W., of the Fairbanks Meridian). The location was approximated from a 1:250,000-scale drawing in Dillon (1982) and is accurate within a 1-mile radius.

**Commodities:****Main:** Sb**Other:** Fe**Ore minerals:** Hematite, pyrite, stibnite**Gangue minerals:****Geologic description:**

This occurrence is described as a vein containing fine-grained pyrite, hematite, and possibly a little stibnite in a carbonate gangue (Dillon, 1982). No other descriptive information is available for this occurrence. The country rocks near the occurrence are Devonian to Silurian(?) marble overlying and in fault contact with Ordovician black phyllite and marble and Ordovician to Cambrian(?) marble (Dillon and Reifenhohl, 1995). The host for the mineralization was not specified.

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

Possibly related to quartz-stibnite veins at Sukakpak Mountain (CH076).

**References:**

Dillon, 1982.

**Primary reference:** Dillon, 1982

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Sukakpak Mountain****Site type:** Prospect**ARDF no.:** CH076**Latitude:** 67.59**Quadrangle:** CH C-6**Longitude:** 149.73**Location description and accuracy:**

The Sukakpak Mountain prospect is at an elevation of about 3,600 feet on the south flank of Sukakpak Mountain about 1/2 mile south of the summit (SE1/4 sec. 15, T. 32 N., R. 10 W., of the Fairbanks Meridian). The location is accurate within a 1/4-mile radius.

**Commodities:****Main:** Ag, Au, Sb**Other:** Hg(?), Mo(?)**Ore minerals:** Cinnabar(?), gold, molybdenite(?), stibnite, tetrahedrite**Gangue minerals:** Calcite(?), quartz**Geologic description:**

The Sukakpak Mountain prospect consists of 2 or 3(?) quartz-stibnite-gold veins exposed intermittently for 1 kilometer in and near a high-angle fault at the contact between Devonian and Silurian(?) Skajit Limestone and underlying Ordovician to Cambrian(?) graphitic quartz-, chlorite-, calcareous schists intruded by metabasite dikes (Dillon, 1982). The veins occur in the Skajit Limestone along thin schist layers or along the contact between marble and the underlying schist unit. The veins consist of early sulfide-poor (traces of chalcopyrite and tetrahedrite) and later stibnite- and gold-bearing quartz. The stibnite occurs as euhedral crystals in amounts ranging from less than 10 percent to more than 50 percent of the vein. Stibnite crystals as long as 8 inches are present. Gold occurs as small cubes and as wire and flakes in fractures within the veins along with stibnite, quartz, and graphite. The veins exhibit characteristics of open-space filling that include crystalline stibnite and cockscomb quartz crystals. Eleven channel samples of the veins (Huber, 1988) showed values of 0.1 to 43 ppm Au, less than 1 to 16.5 ppm Ag, and 0.23 percent to 34 percent Sb. Thirteen additional channel samples (Dillon and Reifenstuhel, 1990) showed an average grade of 0.44 ounce of gold per ton and 17.4 percent Sb. Nokleberg (1987) reported grab samples (presumably of vein material) with as much as 560 grams of gold per ton, 4.5 grams of silver per ton, 54 percent Sb, and 1.7 percent Mo; 0.5 percent Hg was also reported. Some reports (Dillon, 1982; Nokleberg, 1987) have suggested the presence of cinnabar and possibly molybdenite, but Huber's analyses showed

little evidence of elements other than Au and Sb. Huber also noted the presence of kermesite ( $\text{Sb}_2\text{S}_2\text{O}$ ), a red mineral that resembles cinnabar, as a weathering product of the stibnite.

Huber described two veins and referred to them as the lower and upper veins. The lower vein, exposed by trenching on the schist-marble contact, consists of an 8-inch vein and eight small veinlets that trend N70W and dip 45 degrees northeast. They are exposed along strike for a distance of approximately 20 feet and terminate at both ends in black clay- and calcite-rich fault gouge. The veinlets, 1/2 to 4 inches in width and 1 to 3 feet in length, are in thin schist layers in the marble. The footwall of the lower vein is pyritic, graphite-quartz schist, and the hangingwall is black graphitic marble. The upper vein is entirely within the Skajit Limestone. It strikes N56E and dips 70 degrees to 90 degrees southeast. It is 1 to 6 feet in width and is exposed for nearly 400 feet along strike and for 150 vertical feet.

**Alteration:**

There is little gossan or other weathering associated with the veins and almost no wall-rock alteration. The stibnite weathers to yellow stibconite ( $\text{Sb}_3\text{O}_6(\text{OH})$ ) and red kermesite ( $\text{Sb}_2\text{S}_2\text{O}$ ).

**Age of mineralization:**

Middle Cretaceous(?) based on arguments by Dillon (1982) that the age of emplacement of the gold-bearing quartz veins of the Koyukuk and Chandalar districts was between the Neocomian metamorphism of the Devonian host rocks and their erosional unroofing and cooling in Albian time.

**Deposit model:**

Sb-Au vein deposit (Nokleberg and others, 1987)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Surface sampling with some trenching. The occurrence was recognized in the early 1980s, although apparently there are old workings on vein outcrops and evidence of drift mining on Discovery Creek (CH077).

**Production notes:**

**Reserves:**

**Additional comments:**

This prospect is in the Alaska pipeline inner corridor and is not open to mineral entry. It probably is the source of placer Au in Discovery Creek (CH077).

Analytical results from assay of selected high-grade grab samples: 5 to 38 ppm Cu, less than 1 to 30 ppm Pb, 2 to 109 ppm Zn, as much as 27.2 ppm Au, as much as 4.5 ppm Ag, as much as 17,000 ppm Mo, 0.35 to 62 percent Sb, and up to or more than 5,000 ppm Hg, (Dillon, 1982, table 2, p. 17).

**References:**

Dillon, 1982; Mosier and others, 1987; Nokleberg and others, 1987; Huber, 1988; Nokleberg and others, 1988; Dillon and others, 1989; Dillon and Reifentstahl, 1990; Nokleberg and others, 1993; Dillon and others, 1996; Nokleberg and others, 1996.

**Primary reference:** Huber, 1988

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Discovery Creek****Site type:** Prospect**ARDF no.:** CH077**Latitude:** 67.58**Quadrangle:** CH C-6**Longitude:** 149.77**Location description and accuracy:**

Discovery Creek, which is not named on the topographic map, drains the south flank of Sukakpak Mountain. It is about 1 1/2 miles long and heads in the area of the Sukakpak Sb-Au vein prospect (CH076). The point of reference is near the mouth of the creek (sec. 22, T. 32 N., R. 10 W., of the Fairbanks Meridian), but the site of any placer mining on the creek is not known. The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:** Sb(?)**Ore minerals:** Gold, stibnite**Gangue minerals:****Geologic description:**

Discovery Creek drains the Sukakpak Sb-Au vein occurrence (CH076), and the creek gravels contain clasts of stibnite-quartz vein material (Dillon, 1982). Although there is evidence of early workings on the creek (Dillon, 1982), there are no published descriptions of the deposit. The presence of gold in the creek is substantiated by reports of gold recovered with a suction dredge in 1982 (Dillon, 1982).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Not determined

**Workings/exploration:**

Recent (about 1982) testing with suction dredge and evidence of drift mining in the early 1900s (Dillon, 1982).

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Sukakpak Mountain (CH076).

**References:**

Dillon, 1982; Huber, 1988.

**Primary reference:** Dillon, 1982

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Emery Creek; Emory Creek

**Site type:** Mine

**ARDF no.:** CH078

**Latitude:** 67.55

**Quadrangle:** CH C-6

**Longitude:** 149.62

**Location description and accuracy:**

Emery Creek, a north-flowing tributary to the Bettles River, is approximately 2 miles northwest of Glacier Lake. Emery Creek, the name shown on the modern topographic map, is generally referred to as Emory Creek in the literature. The reference point for the Emery Creek placer is approximately 1 mile upstream from the Bettles River (SW1/4 sec. 32, T. 32 N., R. 9 W., of the Fairbanks Meridian) at about the midpoint of a 2-mile stretch of mining. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

According Maddren (1913), Emory (sic) Creek had produced \$10,000 in gold by 1909. The gold occurred on bedrock amidst boulders which had to be moved to recover the gold. Reed (1938) saw no evidence of the mining that Maddren had earlier reported, but he noted prospecting near the junction of Emory Creek with an east-flowing tributary. The results of this prospecting were unknown. Bedrock in the area is mapped as Ordovician black phyllite and intercalated marble (Dillon and Reifenstuhel, 1990).

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes**Site Status:** Inactive**Workings/exploration:**

Possible mining in the early 1900s and later prospecting.

**Production notes:**

Production of approximately \$10,000 (early 1900s gold price) from 1900 to 1909 (Maddren, 1913).

**Reserves:****Additional comments:**

Maddren (1913, p. 105) noted that Emery Creek was the only tributary of the Bettles River on which there has been any placer gold production.

**References:**

Maddren, 1910; Maddren, 1913; Reed, 1938; Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Maddren, 1913**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s):** Magnet Creek

**Site type:** Mine

**ARDF no.:** CH079

**Latitude:** 67.51

**Quadrangle:** CH C-6

**Longitude:** 149.73

**Location description and accuracy:**

Magnet Creek is a north-flowing tributary to Gold Creek approximately 6 1/4 miles due south of Sukakpak Mountain (W 1/2 sec. 14, T. 31 N., R. 10 W., of the Fairbanks Meridian). Mining on Magnet Creek has generally been near its mouth. The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Reed (1938) reported that the present channel of Magnet Creek was mined by open-cut near its mouth and that a high channel, about 50 feet above the present channel, was mined for 500 or 600 feet. Reed (1938) described the location of the mining on the high channel only as being between Gold Creek and Magnet Creek, but its exact location was not given. No other descriptive information is available for this prospect.

**Alteration:**

**Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

Creek gravels were mined by open-cut methods. Mulligan (1974) reported that creek and bench gravels had been worked but that workings were inactive in 1974.

**Production notes:**

**Reserves:**

**Additional comments:**

Magnet Creek is a tributary of Gold Creek (CH080), which has been mined for most of its length. Alaska Kardex No. 031-65 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Reed, 1938; Mulligan, 1974; Maas, 1987; Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; U.S. Bureau of Mines, 1978; Cobb and Cruz, 1983.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Gold Creek****Site type:** Mine**ARDF no.:** CH080**Latitude:** 67.51**Quadrangle:** CH C-6**Longitude:** 149.82**Location description and accuracy:**

Gold Creek is a west-flowing tributary to the Middle Fork Koyukuk River. It is approximately 6 miles south of Sukakpak Mountain. The reference point is near what is thought to be the lower limit of historical placer mining (sec. 17, T. 31 N., R. 10 W., of the Fairbanks Meridian) from which mining extended upstream for 7 to 8 miles. The location is accurate within a 1/4-mile radius.

**Commodities:****Main:** Au**Other:** Sb**Ore minerals:** Gold, stibnite**Gangue minerals:****Geologic description:**

Placer gold has been mined in Gold Creek from the present stream channel in gravels reported to be 2 to 7 feet deep; from a deeply buried channel approximately 50 to 100 feet below the present channel; and from benches about 8 feet above the present channel. The gravel in the present channel is coarse and waterworn, with many boulders. The gravel from one place in the deep channel is fairly fine, with only a few boulders. The ancestral Gold Creek originally flowed to the Middle Fork through what is now lower Linda Creek, but glacial drainage derangement or stream capture diverted the lower mile to its present course. Reed (1938) described the bedrock of Gold Creek as schist cut by a diorite dike a short distance upstream from the mouth of Magnet Creek. Dillon and Reifensuhl (1995) mapped the country rocks in most of the Gold Creek drainage as sedimentary units of the Beaucoup Formation; other rocks present are a sequence of Devonian carbonaceous, siliceous, and calcareous sedimentary and felsic volcanic rocks and one occurrence of Devonian metabasite, which may correspond to the diorite dike described by Reed. The richest placers were between constrictions in the valley caused by resistant schist and diorite. The richest claim was at the mouth of Magnet Creek, just downstream from the diorite dike. Values from various operations along the creek were reported by Reed (1938) to run from about \$0.25 to \$1.50 per square foot of bedrock. Most of the gold forms smooth, shot-like

pieces and small nuggets, but some pieces from high on the creek are angular and may not have been transported far. Angular fragments of stibnite in quartz have been found in the gravels, and some pyritization has been noted in the schist bedrock.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Active

**Workings/exploration:**

Surface and underground drift mining in the early days. Later mining activity was undoubtedly mechanized, but there is no description of this activity.

**Production notes:**

Gold was discovered in Gold Creek during the summer of 1900, and it was one of the first creeks to be mined in the district (Reed, 1938). Since then it has been a significant producer. The creek was mined in most years until around 1916, and mining continued sporadically after that, probably to the present (1998). The stream course has been mined for about 8 miles. Values reported by Reed (1938) ranged from \$0.25 to \$1.50 per square foot of bedrock. Production through 1909 was estimated by Maddren (1913) to be approximately \$232,000.

**Reserves:****Additional comments:**

Gold fineness reported to range between 900 and 931. Alaska Kardex Nos. 031-030, 031-104, 031-103, 031-102, 031-101, 031-100, 031-099, 031-098, 031-092, 031-091, 031-088, 031-066 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Schrader, 1900; Schrader, 1904; Brooks, 1908; Maddren, 1910; Maddren, 1913; Brooks, 1915; Brooks, 1916 (B642); Brooks, 1916 (B649); Brooks, 1918; Wimmeler, 1925; Smith, 1933 (B844-A); Smith, 1936; Reed, 1938; Smith, 1939 (B910-A); Smith, 1939 (B917-A); Joesting, 1942; Heiner and Wolff, 1968; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Mulligan, 1974; Cobb, 1976 (OFR 76-340); Grybeck, 1977;

DeYoung, 1978; U.S. Bureau of Mines, 1978; Dillon, 1982; Cobb and Cruz, 1983; Bundtzen and others, 1988; Dillon and others, 1989; Bundtzen and others, 1990; Dillon and Reifenstuhl, 1995.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Linda Creek

**Site type:** Mine

**ARDF no.:** CH081

**Latitude:** 67.52

**Quadrangle:** CH C-6

**Longitude:** 149.82

**Location description and accuracy:**

Linda Creek is a south- and west-flowing tributary to the Middle Fork Koyukuk River. The mine site is approximately 6 1/4 miles south-southwest of Sukakpak Mountain and 1/2 mile east of the Trans-Alaska Pipeline (sec. 17, T. 31 N., R. 10 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Au

**Other:**

**Ore minerals:** Gold

**Gangue minerals:**

**Geologic description:**

Linda Creek appears to have been a fairly consistent placer producer from the early 1900s until the present (Cobb, 1976, OFR 76-340; Bundtzen and others, 1996). Most workers believe that the gold in Linda Creek was derived from a source other than the current Linda Creek drainage and that it most likely was the high channel on Gold Creek (Maddren, 1913). The high channel of Gold Creek probably originally drained into the Middle Fork along what is now lower Linda Creek before the current lower Gold Creek captured the drainage. The upper part of Linda Creek (above the map site where the creek abruptly turns to the west) runs in a wide, flat valley over glacial outwash material. Reed (1938) noted that no prospects had ever been found in that part of the drainage. The lower part of the creek (below where it turns to the west) has cut through the glacial fill and runs in a shallow cut in the underlying schist. Reed (1938) also noted that about 1/4 mile below where Linda Creek intersects the old Gold Creek channel the bedrock pitches off steeply to an unknown depth and that no values have been found below this point. In 1937 a small piece of the old channel that had not been found in the early days was being worked. This occurrence was described as 8 feet of gravel over a hard schist bedrock. The gravel was waterworn, fine material with few boulders but much heavy sediment in the sand. The gold occurred in the lower 3 feet of the gravel and upper 2 feet of the bedrock. The gold was said to be fairly fine. Maddren (1913) noted that the character of the gold

was similar to that in Gold Creek. The fineness of the gold averaged about 945.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Yes; small

**Site Status:** Active

**Workings/exploration:**

There is little description of the early mining except that nearly all the gold was mined from the Discovery claim about 1/2 mile above the mouth, but only the lower half of this claim was very productive. Reed (1938) described a 'shoveling in' surface mining operation. Hand and hydraulic mining was reported in 1974, and in 1993 and 1996 underground drift mining was continuing 'as it has for many years' (Bundtzen and others, 1994; Bundtzen and others, 1996).

**Production notes:**

Gold was discovered on Linda Creek in 1901, and sporadic small-scale mining has been reported since then. Production through 1909 was estimated to have been approximately \$20,000 (Maddren, 1913); almost all of it was in 1902. The ground in a portion of the old channel was reported to run \$0.95 per square foot of bedrock (Reed, 1938).

**Reserves:****Additional comments:**

The channel containing the placer deposit formerly was the lower part of Gold Creek.

**References:**

Maddren, 1910; Maddren, 1913; Brooks, 1915; Brooks, 1916 (B642-A); Smith, 1917; Reed, 1938; Smith, 1939 (B910-A); Smith, 1939 (B917-A); Heiner and Wolff, 1968; Cobb, 1972 (MF 457); Cobb, 1973 (B1374); Mulligan, 1974; Cobb, 1976 (OFR 76-340); Carnes, 1976; DeYoung, 1978; Eakins and others, 1983; Bundtzen and others, 1984; Eakins and others, 1985; Bundtzen and others, 1986; Bundtzen and others, 1987; Bundtzen and others, 1988; Bundtzen and others, 1994; Bundtzen and others, 1996; Swainbank and others, 1997.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (south of the Hammond River)

**Site type:** Occurrence

**ARDF no.:** CH082

**Latitude:** 67.63

**Quadrangle:** CH C-6

**Longitude:** 149.98

**Location description and accuracy:**

This site is at an elevation of about 4,300 feet, on a ridge south of the Hammond River, approximately 6 1/2 miles west-northwest of Sukakpak Mountain and 5 1/2 miles north of Jennie Creek Lake (SW1/4 sec. 3, T. 32 N., R. 11 W., of the Fairbanks Meridian). This site corresponds to unnamed loc. 76 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Unspecified copper sulfides and/or malachite-azurite

**Gangue minerals:**

**Geologic description:**

An occurrence of Cu sulfides and/or malachite-azurite stains is in an area mapped as Middle to Upper Devonian(?) conglomerate in a more extensive unit of black slate, phyllite, and chloritic siltstone (Dillon and Reifenstuhel, 1995). These rocks are all part of the Beaucoup Formation. No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:****Production notes:****Reserves:****Additional comments:**

A small outcrop, mapped by Dillon and Reifentuhl (1995) as andesite tuff-dacite flow, is located adjacent to the conglomerate unit about 1/2 mile southeast of the Cu occurrence. This occurrence is located within Gates of the Arctic National Park.

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Our Creek****Site type:** Occurrence**ARDF no.:** CH083**Latitude:** 67.76**Quadrangle:** CH D-3**Longitude:** 148.27**Location description and accuracy:**

This occurrence is approximately 10 miles north of the north end of Squaw Lake. The reference point is on the lower reaches of Our Creek (sec. 20, T. 34 N., R. 3 W., of the Fairbanks Meridian), but the exact location of the occurrence is not known. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1930, MR 31-4) reported that very encouraging prospects had been found on Our Creek in the early days but that there was no report of any mining or any description of the deposit. Our Creek drains an area mapped as gneissic biotite granite (presumably part of the Baby Creek batholith), mica schist, calcareous schist and marble, and calc-silicate hornfels developed near the granitic rocks (Brosgé and Reiser, 1964).

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Inactive

**Workings/exploration:**

Three(?) claims may have been located on the creek, but there is no information about any work on them.

**Production notes:**

**Reserves:**

**Additional comments:**

Alaska Kardex No. 031-141 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Reed, 1930 (MR 31-4); Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Reed, 1930 (MR 31-4)

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (northwest of Bend Mountain)

**Site type:** Occurrence

**ARDF no.:** CH084

**Latitude:** 67.84

**Quadrangle:** CH D-3

**Longitude:** 148.49

**Location description and accuracy:**

This site is at an elevation of about 3,900 feet, approximately 2 1/2 miles east of the east end of Reds Lake and 6 miles northwest of Bend Mountain (NE1/4 sec. 29, T. 35 N., R. 4 W., of the Fairbanks Meridian). This site corresponds to unnamed loc. 84 in DeYoung (1978). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag(?), Pb

**Other:**

**Ore minerals:** Galena

**Gangue minerals:**

**Geologic description:**

Limited information describes this prospect only as an area of galena-bearing veins and stockworks (DeYoung, 1978). Its location appears to be in a narrow band of Devonian(?) quartz-muscovite-chlorite schist which separates Devonian calcareous schist and marble from a narrow northward extension of the Devonian Horace Mountain gneissic biotite granite (Brosgé and Reiser, 1964).

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Claims staked in 1972.

**Production notes:**

**Reserves:**

**Additional comments:**

Alaska Kardex No. 031-58D (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

U.S. Bureau of Mines, 1973; Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (north of Bend Mountain)

**Site type:** Occurrence

**ARDF no.:** CH085

**Latitude:** 67.94

**Quadrangle:** CH D-3

**Longitude:** 148.37

**Location description and accuracy:**

This occurrence is at an elevation of about 4,100 feet, approximately 9 miles northeast of Reds Lake (SE1/4 sec. 14, T. 36 N., R. 4 W., of the Fairbanks Meridian). This site corresponds to the easternmost of three unnamed prospects shown as loc. 85 in DeYoung (1978) and is included with loc. 50 in Schmidt (1997). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Malachite, pyrite, pyrrhotite

**Gangue minerals:**

**Geologic description:**

Schmidt (1997, loc. 50) includes this occurrence with three, presumably similar, occurrences. They are described as quartz veinlets containing malachite-azurite plus or minus pyrite, chalcopyrite, and pyrrhotite in the Silurian and Devonian Skajit(?) Limestone and overlying siltstone and limestone (Beaucoup Formation?). The geologic map indicates that this occurrence is near a thrust contact between Devonian(?) purple, green, and red chloritic slate and phyllite and the Devonian(?) Skajit Limestone (Brosgé and Reiser, 1964). No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Schmidt, 1997.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (north of Reds Lake)

**Site type:** Occurrence

**ARDF no.:** CH086

**Latitude:** 67.94

**Quadrangle:** CH D-4

**Longitude:** 148.57

**Location description and accuracy:**

This occurrence is at an elevation of about 3,400 feet, approximately 7 miles due north of the east end of Reds Lake (sec. 13, T. 36 N., R. 5 W., of the Fairbanks Meridian). This site corresponds to the northwesternmost of three unnamed prospects shown as loc. 85 in DeYoung (1978) and is included with loc. 50 in Schmidt (1997). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Malachite, pyrite, pyrrhotite

**Gangue minerals:**

**Geologic description:**

Schmidt (1997, loc. 50) includes this occurrence with three, presumably similar, occurrences. They are described as quartz veinlets containing malachite-azurite plus or minus pyrite, chalcopyrite, and pyrrhotite in the Silurian and Devonian Skajit(?) Limestone and overlying siltstone and limestone (Beaucoup Formation?). The geologic map indicates that this occurrence is near a thrust contact between Devonian(?) purple, green, and red chloritic slate and phyllite and the Devonian(?) Skajit Limestone (Brosgé and Reiser, 1964). No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Schmidt, 1997.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (near head of Thru Creek)

**Site type:** Occurrence

**ARDF no.:** CH087

**Latitude:** 67.90

**Quadrangle:** CH D-4

**Longitude:** 148.59

**Location description and accuracy:**

This occurrence is at an elevation of about 4,400 feet, approximately 4 1/4 miles due north of Reds Lake (SE1/4 sec. 35, T. 36 N., R. 5 W., of the Fairbanks Meridian). This site corresponds to the southernmost of three unnamed prospects shown as loc. 85 in DeYoung (1978) and is included with loc. 50 in Schmidt (1997). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Malachite, pyrite, pyrrhotite

**Gangue minerals:**

**Geologic description:**

Schmidt (1997, loc. 50) includes this occurrence with three, presumably similar, occurrences. They are described as quartz veinlets containing malachite-azurite plus or minus pyrite, chalcopyrite, and pyrrhotite in the Silurian and Devonian Skajit(?) Limestone and overlying siltstone and limestone (Beaucoup Formation?). The geologic map indicates that this occurrence is near a thrust contact between Devonian(?) purple, green, and red chloritic slate and phyllite and the Devonian(?) Skajit Limestone (Brosgé and Reiser, 1964). No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Schmidt, 1997.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Unnamed (north-northwest of Reds Lake)

**Site type:** Occurrence

**ARDF no.:** CH088

**Latitude:** 67.91

**Quadrangle:** CH D-4

**Longitude:** 148.69

**Location description and accuracy:**

This site is at an elevation of about 4,300 feet, approximately 5 3/4 miles north-northwest of the west end of Reds Lake (SW1/4 sec. 28, T. 36 N., R. 5 W., of the Fairbanks Meridian). This site corresponds to unnamed loc. 78 in DeYoung (1978) and is included with loc. 50 in Schmidt (1997). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Unspecified copper sulfides (chalcopyrite?) and/or malachite-azurite, pyrite (?), pyrrhotite(?)

**Gangue minerals:**

**Geologic description:**

This occurrence is described only as copper sulfides and/or malachite-azurite stains in Devonian limestone and siltstone overlying the Skajit Limestone (Brosgé and Reiser, 1964). A small body of greenstone is nearby. Schmidt (1997, loc. 50) includes this prospect in a group of three, presumably similar deposits. They consist of quartz veinlets containing malachite-azurite plus or minus pyrite, chalcopyrite, and pyrrhotite in the Silurian and Devonian Skajit(?) Limestone and overlying siltstone and limestone (Beaucoup Formation?). No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Schmidt, 1997.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Bob

**Site type:** Occurrence

**ARDF no.:** CH089

**Latitude:** 67.88

**Quadrangle:** CH D-4

**Longitude:** 148.68

**Location description and accuracy:**

This occurrence is at an elevation of about 4,500 feet on a ridge approximately 1 1/2 miles southwest of the headwater lake on Thru Creek (NE1/4 sec. 9, T. 35 N., R. 5 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Pb, Zn

**Other:**

**Ore minerals:** Galena, sphalerite

**Gangue minerals:**

**Geologic description:**

The Bob prospect is one of several Pb-Zn-Ag plus or minus Cu prospects near this site (DeYoung, 1978). Information specific to the property is sparse and only describes the prospect as galena and sphalerite with silver values in skarn associated with limestone (Grybeck, 1977). Newberry and others (1997) include the Bob prospect in a group of calcic Zn-Pb skarns and replacement bodies. These Zn-Pb skarns are described by Newberry and others (1986) as distal to Devonian(?) porphyry Cu-Mo systems associated with the Horace Mountain plutons in the Chandalar copper belt. The bedrock near of the prospect is mapped as Devonian Hunt Fork Shale near its contact with Skajit Limestone (Brosgé and Reiser, 1964). Intercalated diorite sills and andesitic flows(?) are also present in the section.

**Alteration:**

Calc-silicate.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Zn-Pb skarn deposits(?) (Cox and Singer, 1986; model 18c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**  
18c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Claims were located in 1972 and 1976 by Placid Oil. No other information is available.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Bibban prospect (CH090). Alaska Kardex No. 031-61A (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Grybeck, 1977; Cobb and Cruz, 1983; DeYoung, 1978; Newberry and others, 1986; Newberry and others, 1997.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Bibban; Bibbon****Site type:** Prospect**ARDF no.:** CH090**Latitude:** 67.88**Quadrangle:** CH D-4**Longitude:** 148.73**Location description and accuracy:**

This site is at an elevation of about 4,800 feet, approximately 3 1/2 miles northwest of the junction of Thru Creek and the North Fork Chandalar River (SW1/4 sec. 5, T. 35 N., R. 5 W., of the Fairbanks Meridian); the location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Cu**Other:****Ore minerals:** Chalcopyrite, malachite, pyrite(?), pyrrhotite(?)**Gangue minerals:** Quartz**Geologic description:**

The limited information about this prospect describes it as malachite and chalcopyrite in quartz veinlets in the Silurian and Devonian Skajit Limestone near its contact with the Upper Devonian Hunt Fork Shale (Grybeck, 1977; Brosgé and Reiser, 1964). The prospect is close to the Bob (CH089) and Gayle (CH091) prospects, which Newberry and others (1997) classified as calcic Zn-Pb skarns and replacement bodies. The location, mineralogy, and geologic setting of the Bibban prospect suggest that it may be related to these Zn-Pb skarns or to Cu-Ag skarns that are also in the area.

**Alteration:****Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Zn-Pb skarn deposits(?) (Cox and Singer, 1986; model 18c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Claims were staked in 1972 and 1976.

**Production notes:**

**Reserves:**

**Additional comments:**

Alaska Kardex No. 031-61B (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Grybeck, 1977; DeYoung, 1978; Schmidt, 1997.

**Primary reference:** DeYoung, 1978

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Gayle

**Site type:** Prospect

**ARDF no.:** CH091

**Latitude:** 67.86

**Quadrangle:** CH D-4

**Longitude:** 148.72

**Location description and accuracy:**

This site is at an elevation of about 3,500 feet, approximately 3 miles west-northwest of the west end of Reds Lake (sec. 17, T. 35 N., R. 5 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Cu, Pb, Zn

**Other:** Au(?)

**Ore minerals:** Argentiferous galena, copper sulfides and/or malachite and azurite, sphalerite

**Gangue minerals:**

**Geologic description:**

The Gayle prospect is one of at least two Pb-Zn-Ag plus or minus Cu prospects near this site. Descriptive information specific to the property is sparse. Brosgé and Reiser (1964) described the prospect as chalcopyrite(?) and/or malachite-azurite stains near the top of the Skajit Limestone, while Grybeck (1977) reported that sphalerite and galena (with silver values) on the Gayle and Bob prospects occur in small veinlets and stockworks in altered limestone and marble. Newberry and others (1997) classify the Gayle prospect as a calcic Zn-Pb skarn and replacement body. These Zn-Pb skarns are described by Newberry and others (1986) as distal to Devonian(?) porphyry Cu-Mo systems associated with the Horace Mountain plutons in the Chandalar copper belt. The bedrock near the prospect is mapped as Devonian Hunt Fork Shale near its contact with Skajit Limestone. Intercalated diorite sills and andesitic flows(?) are also present in the section.

**Alteration:**

**Age of mineralization:**

Devonian(?), based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Zn-Pb skarn deposits(?) (Cox and Singer, 1986; model 18c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**  
18c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**  
Claims staked in 1972 and 1973.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Bob (CH089) & Bibban (CH090).

Brosgé and Reiser (1972, p. 7, 11), reported analytical results of 1 to 3 ppm Ag, 700 ppm Pb, and 6.5 ppm Au from a rock sample probably collected from the Gayle prospect.

Alaska Kardex Nos. 031-61C and 58B (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Brosgé and Reiser, 1964; Berg and Cobb, 1967; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Newberry and others, 1986; Maas, 1987 (USBM OFR 10-87); Newberry and others, 1997.

**Primary reference:** Newberry and others, 1997

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Unnamed (east end of Reds Lake)****Site type:** Occurrence**ARDF no.:** CH092**Latitude:** 67.84**Quadrangle:** CH D-4**Longitude:** 148.57**Location description and accuracy:**

The reference point for this prospect is at an elevation of about 2,000 feet near the east end of Reds Lake approximately 24 miles north of Chandalar (sec. 24, T. 34 N., R. 5 W., of the Fairbanks Meridian). Its location is somewhat speculative because it is derived from a sample collected around 1900. This occurrence is listed in several publications (Cobb, 1976, [OFR 76-340]; DeYoung, 1978; Cobb and Cruz, 1983) as some variant of Chandalar River, North Fork. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Ag, Au**Other:** Pb**Ore minerals:** Argentiferous(?) galena, gold**Gangue minerals:** Quartz**Geologic description:**

This prospect is described only as a sample of a quartz vein, collected prior to 1900, which assayed 0.42 oz Au and 0.14 oz Ag (Schrader, 1900). The country rock near this prospect is a relatively large outcrop area of albite-epidote-chlorite-muscovite greenschist (Brosgé and Reiser, 1964). This greenschist is in contact with a sliver of the Devonian(?) Horace Mountain pluton to the south and Devonian calcareous units to the north. Brosgé and Reiser (1972) included this occurrence in a group of anomalous stream-sediment and rock samples that show gold values and anomalous lead, zinc, copper, and silver. They imply an association between the above-described quartz vein sample and a sample of galena from a nearby prospect in limestone which returned values of 360 ppm Ag and 6.5 ppm Au. The location of the nearby prospect is not given.

**Alteration:****Age of mineralization:****Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Bob (CH089), Gayle (CH091), Bibban (CH090), and Steph (CH093) prospects, which are located a few miles northwest of this prospect, and an unnamed occurrence (CH084), located a few miles east.

Alaska Kardex No. 031-27 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Schrader, 1900; Brosgé and Reiser, 1972; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Brosgé and Reiser, 1972

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Steph

**Site type:** Occurrence

**ARDF no.:** CH093

**Latitude:** 67.86

**Quadrangle:** CH D-4

**Longitude:** 148.81

**Location description and accuracy:**

The Steph occurrence is at an elevation of about 3,800 feet, approximately 5 1/2 miles west-northwest of Reds Lake in the hills north of and overlooking the North Fork Chandalar River (NW1/4 sec. 13, T. 35 N., R. 6 W., of the Fairbanks Meridian). The reference point corresponds to loc. 69 in DeYoung (1978) and is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Cu

**Other:**

**Ore minerals:** Azurite, malachite, tennantite

**Gangue minerals:** Quartz

**Geologic description:**

This occurrence is described as malachite, azurite, and tennantite in a quartz vein (Grybeck, 1977). The country rocks are Devonian Skajit Limestone near a large body of greenstone interpreted as schistose hornblende diorite, pyroxene diorite sills, and andesitic flows(?) (Brosge and Reiser, 1964). No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

Claims (15?) staked by Placid Oil Co. in 1971-1973.

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Bibban (CH090), Bob (CH089), Gayle (CH091), and Mowgli (CH094).

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Grybeck, 1977

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Mowgli; Sher Khan; Upper Camp group

**Site type:** Prospect

**ARDF no.:** CH094

**Latitude:** 67.82

**Quadrangle:** CH D-4

**Longitude:** 148.81

**Location description and accuracy:**

The Mowgli-Sher Khan claim group lies in the hills immediately south of the North Fork Chandalar River between Quartz and Geroe creeks and approximately 25 miles north-northwest of Chandalar. The reference point is located near the south-center of the claim group (NW1/4 sec. 36, T. 35 N., R. 6 W., of the Fairbanks Meridian). The claims extend approximately a mile west and southeast from the reference point. The Jim-Montana property (CH095) is west of and contiguous with the Mowgli-Sher Khan claim group, and together they form one large claim block. The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Cu, Zn

**Other:** Ag, Pb

**Ore minerals:** Chalcopyrite, galena, sphalerite, tennantite

**Gangue minerals:**

**Geologic description:**

Early descriptions of this prospect indicated only the presence of chalcopyrite, sphalerite, and minor galena and tennantite in skarn in limestone near a thrust-fault contact with Paleozoic or older calcareous schist (Grybeck, 1977; Cobb and Cruz, 1983). Newberry and others (1986) included it in a group of skarn deposits that form a belt northwest of and related to the granitic rocks of the Devonian(?) Horace Mountain plutons. Many of these skarns exhibit both garnet and pyroxene prograde and epidote and actinolite retrograde mineral assemblages, and Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns categorize them as continental-margin, porphyry-related copper skarns. Newberry and others (1986) classified the prospect as a Cu-Zn-Pb deposit and suggested that these Pb-Zn-rich skarns represent distal concentrations surrounding porphyry systems in the Chandalar district. Newberry and others (1997) classify the Mowgli deposit as a calcic Zn-Pb skarn and replacement body. The country rocks near this prospect were mapped by Brosgé and Reiser (1964) as principally Devonian Skajit Limestone in thrust contact with Devonian calcareous schist and marble.

**Alteration:**

Calc-silicate(?).

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Zn-Pb skarn deposits(?) (Cox and Singer, 1986; model 18c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18c(?)

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Claims staked in 1975 and 1976.

**Production notes:****Reserves:****Additional comments:**

See also: Jim-Montana (CH095).

Alaska Kardex Nos. 031-58C, 031-60B (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Newberry and others, 1986; Maas, 1987 (USBM OFR 10-87); Baggs and others, 1988; Newberry and others, 1997.

**Primary reference:** Grybeck, 1977**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Jim-Montana****Site type:** Prospect**ARDF no.:** CH095**Latitude:** 67.82**Quadrangle:** CH D-4**Longitude:** 148.91**Location description and accuracy:**

The Jim-Montana property lies in the hills immediately south of the North Fork Chandalar River and approximately 8 miles south-southwest of Reds Lake. The reference point is located near the south-center of the Jim-Montana claim group (secs. 28, 33, T. 35 N., R. 6 W., of the Fairbanks Meridian) and is generally the same as loc. 34 in DeYoung (1978). The claims extend approximately a mile west-northwest and east-southeast from the reference point. The Jim-Montana [and IF(?)] property is west of and contiguous with the Mowgli-Sher Khan claim group (CH094), and together they form one large claim block. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Cu, Zn**Other:** Ag, Pb**Ore minerals:** Chalcopyrite, galena, sphalerite, tennantite**Gangue minerals:****Geologic description:**

Early descriptions of this prospect indicated only the presence of disseminated chalcopyrite and sphalerite with minor galena, tennantite, and malachite stains in skarn in the Silurian/Devonian Skajit Limestone (Grybeck, 1977; DeYoung, 1978). Newberry and others (1986) included it in a group of skarn deposits that form a belt northwest of and related to the granitic rocks of the Devonian(?) Horace Mountain plutons. Many of these skarns exhibit both garnet and pyroxene prograde and epidote and actinolite retrograde mineral assemblages, and Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns categorize them as continental-margin, porphyry-related copper skarns. Newberry and others (1986) classified the prospect, as a Cu-Zn-Pb prospect and Newberry and others (1997) suggest that these Pb-Zn-rich skarns represent distal concentrations surrounding porphyry systems in the Chandalar district. Newberry and others (1997) classify the Jim-Montana deposit as a calcic Zn-Pb skarn and replacement body. The country rock near this prospect is principally Devonian Skajit Limestone (Brosgé and Reiser, 1964).

**Alteration:**

Calc-silicate(?).

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Zn-Pb skarn deposits(?) (Cox and Singer, 1986; model 18c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18c(?)

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Claims staked in 1972 and 1975.

**Production notes:****Reserves:****Additional comments:**

See also: Mowgli-Sher Khan prospect (CH094).

Alaska Kardex Nos. 031-58a, 031-60a (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Environmental Information and Data Center, 1982; Newberry and others, 1986; Maas, 1987 (USBM OFR 10-87); Nokleberg and others, 1987; Nokleberg and others, 1988; Nokleberg and others, 1993; Nokleberg and others, 1996; Newberry and others, 1997.

**Primary reference:** Grybeck, 1977**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s):** Unnamed (west-southwest of Reds Lake)

**Site type:** Occurrence

**ARDF no.:** CH096

**Latitude:** 67.81

**Quadrangle:** CH D-4

**Longitude:** 148.97

**Location description and accuracy:**

This site is at an elevation of about 4,700 feet, approximately 10 miles west-southwest of Reds Lake (SE1/4 sec. 31, T. 35 N., R. 6 W., of the Fairbanks Meridian). This site corresponds to loc. 77 in DeYoung (1978). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:**

**Ore minerals:** Unspecified copper sulfides and/or malachite-azurite

**Gangue minerals:**

**Geologic description:**

This occurrence consists of Cu sulfides and/or malachite-azurite stains near the contact between Devonian Hunt Fork Shale and Skajit Limestone (DeYoung, 1978). A greenstone body is mapped within the Hunt Fork Shale south of the Cu occurrence. No other information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:****Reserves:****Additional comments:**

The Jim-Montana prospect (CH095) and Mowgli-Sher Khan prospect (CH094) prospects are a few miles east of this prospect.

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Vicki; Vicky

**Site type:** Occurrence

**ARDF no.:** CH097

**Latitude:** 67.79

**Quadrangle:** CH D-4

**Longitude:** 148.99

**Location description and accuracy:**

The Vicki occurrence is at an elevation of about 4,600 feet just east of the headwaters of Robert Creek. It is approximately 8 1/2 miles northeast of Horace Mountain (sec. 7, T. 34 N., R. 6 W., of the Fairbanks Meridian) and about 1 mile north of the Cindy prospect (CH098). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Au(?), Cu

**Other:** Pb, Zn

**Ore minerals:** Chalcopyrite, galena(?), pyrite, sphalerite

**Gangue minerals:** Epidote

**Geologic description:**

The Vicki occurrence is one of a number of skarn deposits in the Chandalar area which have been described in general by Newberry and others (1986). These skarns are all located northwest of a belt of Devonian(?) granitic rocks informally named the Horace Mountain plutons. Many exhibit both prograde and retrograde mineral assemblages. Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns categorize them as continental-margin, porphyry-related copper skarns. Early reports (DeYoung, 1978) group the Vicki prospect with the Mike (CH100), Cindy (CH098), and Pilgrim (CH099) prospects, all of which Newberry and others (1986) classified as Cu (Zn-Ag?) skarns. The mineralogy of a specimen (identified only as being from the Mike-Vicky-Cindy prospects) includes epidote, chalcopyrite, pyrite, and sphalerite (Newberry and others, 1986). Analyses of this specimen ran 0.25 percent Cu, 0.83 percent Zn, 0.002 percent Pb, and 0.5 ppm Ag. A listing for the Vicky prospect on the Ventures Resource Corporation (currently exploring Doyon, Limited lands in the Chandalar area) website (1998, URL <http://www.venturesresource.com/>) classifies it as a Cu-Au deposit, although no data are given.

**Alteration:**

Calc-silicate(?).

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits (Cox and Singer, 1986; model 18b)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Claims located in 1972.

**Production notes:****Reserves:****Additional comments:**

See also: Cindy (CH098), Mike (CH100), Pilgrim (CH099), Evelyn Lee (CH059), Luna (CH101), Victor (CH064), and Ginger (CH060).

In early reports (DeYoung, 1978; Newberry and others, 1986) the Vicki prospect is grouped with all or some of the Cindy, Pilgrim, and Mike prospects.

**References:**

DeYoung, 1978; Newberry and others, 1986; Ventures Resource Corporation, 1998.

**Primary reference:** Newberry and others, 1986**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s):** Cindy

**Site type:** Occurrence

**ARDF no.:** CH098

**Latitude:** 67.77

**Quadrangle:** CH D-4

**Longitude:** 148.99

**Location description and accuracy:**

The Cindy occurrence is at an elevation of about 5,100 feet on a peak just east of the headwaters of Robert Creek (sec. 18, T. 34 N., R. 6 W., of the Fairbanks Meridian) and approximately 7 3/4 miles northeast of Horace Mountain. It is about 1 mile south of the Vicki prospect (CH097). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Au(?), Cu

**Other:** Pb, Zn

**Ore minerals:** Chalcopyrite, galena(?), pyrite, sphalerite

**Gangue minerals:** Epidote

**Geologic description:**

The Cindy occurrence is one of a number of skarn deposits in the Chandalar area which have been described in general by Newberry and others (1986). These skarns are all located northwest of a belt of Devonian(?) granitic rocks informally named the Horace Mountain plutons. Many exhibit both prograde and retrograde mineral assemblages. Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns categorize them as continental-margin, porphyry-related copper skarns. Early reports (DeYoung, 1978) group the Cindy prospect with the Mike (CH100), Vicki (CH097), and Pilgrim (CH099) prospects, all of which Newberry and others (1986) classified as Cu (Zn-Ag?) skarns. The mineralogy of a specimen (identified only as being from the Mike-Vicky-Cindy prospects) includes epidote, chalcopyrite, pyrite, and sphalerite (Newberry and others, 1986). Analyses of this specimen ran 0.25 percent Cu, 0.83 percent Zn, 0.002 percent Pb, and 0.5 ppm Ag. A listing for the Cindy prospect on the Ventures Resource Corporation (currently exploring Doyon, Limited lands in the Chandalar area) website (1998, URL <http://www.venturesresource.com/>) classifies it as a gold deposit, although no data are given.

**Alteration:**

Calc-silicate.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits (Cox and Singer, 1986; model 18b)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b

**Production Status:** None**Site Status:** Not determined**Workings/exploration:**

Claims located in 1972. Surface sampling.

**Production notes:****Reserves:****Additional comments:**

See also: Mike (CH100), Vicki (CH097), Pilgrim (CH099), Evelyn Lee (CH059), Luna (CH101), Victor (CH064), and Ginger (CH060).

In early reports (DeYoung, 1978; Newberry and others, 1986) the Cindy prospect is grouped with all or some of the Pilgrim, Mike, and Vicki prospects.

**References:**

DeYoung, 1978; Newberry and others, 1986; Ventures Resource Corporation, 1998.

**Primary reference:** Newberry and others, 1986**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s): Pilgrim****Site type:** Occurrence**ARDF no.:** CH099**Latitude:** 67.75**Quadrangle:** CH D-5**Longitude:** 149.03**Location description and accuracy:**

The Pilgrim occurrence is at an elevation of about 4,600 feet just east of the headwaters of Robert Creek (SW1/4 sec. 24, T. 34 N., R. 7 W., of the Fairbanks Meridian) approximately 6 miles northeast of Horace Mountain and about 1 1/4 mile south-southeast of the Mike prospect (CH100). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Ag, Au(?), Cu**Other:** Zn**Ore minerals:** Chalcopyrite, pyrite, sphalerite**Gangue minerals:** Actinolite, epidote, garnet**Geologic description:**

The Pilgrim occurrence is one of four previously grouped occurrences which, in addition to Pilgrim, included Vicki (CH097), Cindy (CH098), and Mike (CH100) (DeYoung, 1978). Newberry and others (1986) described in general a group of skarn prospects in the Chandalar area that includes the Pilgrim occurrence. This group of skarns is northwest of a belt of Devonian(?) granitic rocks informally named the Horace Mountain plutons. Many of the skarns exhibit both prograde and retrograde mineral assemblages. Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns categorize them as continental-margin, porphyry-related copper skarns. Early data on these prospects (as a group) indicated the presence of small amounts of tactite-associated copper mineralization (DeYoung, 1978). Newberry and others (1986) classified the Pilgrim prospect as a Cu-Zn-Pb deposit, and Newberry and others (1997) classify it as a calcic Cu skarn. The mineralogy of a specimen from the Pilgrim prospect includes garnet, epidote, actinolite, pyrite, sphalerite, and chalcopyrite (Newberry and others, 1986). Analyses of this specimen ran 12.4 percent Cu, 0.24 percent Zn, and 71 ppm Ag. A listing for the Pilgrim prospect on the Ventures Resource Corporation (currently exploring Doyon, Limited lands in the Chandalar area) website (1998, URL <http://www.venturesresource.com/>) classifies it as a Cu-Au deposit, although no supporting data are given.

**Alteration:**

Calc-silicate(?).

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits (Cox and Singer, 1986; model 18b)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Claims located in 1972.

**Production notes:****Reserves:****Additional comments:**

See also: Mike (CH100), Vicki (CH097), Evelyn Lee (CH059), Luna (CH101), Victor (CH064), and Ginger (CH060). In early reports (DeYoung, 1978) the Pilgrim prospect is grouped with the Cindy, Mike, and Vicki prospects.

**References:**

DeYoung, 1978; Newberry and others, 1986; Newberry and others, 1997; Ventures Resource Corporation, 1998.

**Primary reference:** Newberry and others, 1986**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s):** Mike

**Site type:** Occurrence

**ARDF no.:** CH100

**Latitude:** 67.77

**Quadrangle:** CH D-5

**Longitude:** 149.05

**Location description and accuracy:**

The Mike occurrence is at an elevation of about 4,000 feet just east of the headwaters of Robert Creek (SE1/4 sec. 14, T. 34 N., R. 7 W., of the Fairbanks Meridian) approximately 7 miles north-northeast of Horace Mountain and about 1 1/2 miles west of the Cindy prospect (CH098). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Ag, Au(?), Cu

**Other:** Pb, Zn

**Ore minerals:** Chalcopyrite, galena(?), pyrite, sphalerite

**Gangue minerals:** Epidote

**Geologic description:**

The Mike occurrence is one of four previously grouped occurrences which, in addition to Mike, included Vicki (CH097), Cindy (CH098), and Pilgrim (CH099) (DeYoung, 1978). Newberry and others (1986) described in general a group of skarn prospects in the Chandalar area which includes the Mike occurrence. This group of skarns is northwest of a belt of Devonian(?) granitic rocks informally named the Horace Mountain plutons. Many of the skarns exhibit both prograde and retrograde mineral assemblages. Newberry and others (1986) stated that the mineralogy, mineralization, and alteration of these skarns categorize them as continental-margin, porphyry-related copper skarns. Early data on this group of prospects indicated the presence of small amounts of tactite-associated copper mineralization (DeYoung, 1978). Newberry and others (1986) classified the Mike prospect as a Cu (Zn-Ag?) skarn, and Newberry and others (1997) classified it as a calcic Cu skarn. The mineralogy of a specimen (identified only as being from the Mike-Vicki-Cindy prospects) includes epidote, chalcopyrite, pyrite, and sphalerite (Newberry and others, 1986). An analysis of this specimen ran 0.25 percent Cu, 0.83 percent Zn, 0.002 percent Pb, and 0.5 ppm Ag. A listing for the Mike prospect on the Ventures Resource Corporation (currently exploring Doyon, Limited lands in the Chandalar area) website (1998, URL <http://www.venturesresource.com/>) classifies it as a Cu-Au deposit, although no supporting data are given.

**Alteration:**

Calc-silicate(?).

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits (Cox and Singer, 1986; model 18b)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b

**Production Status:** None**Site Status:** Inactive**Workings/exploration:**

Claims located in 1972.

**Production notes:****Reserves:****Additional comments:**

See also: Vicki (CH097), Pilgrim (CH099), Evelyn Lee (CH059), Luna (CH101), Victor (CH064), and Ginger (CH060). In early reports (DeYoung, 1978, Newberry and others, 1986) the Mike prospect is grouped with all or some of the Pilgrim, Cindy, and Vicki prospects.

**References:**

DeYoung, 1978; Newberry and others, 1986; Newberry and others, 1997; Ventures Resource Corporation, 1998.

**Primary reference:** Newberry and others, 1986**Reporter(s):** J.M. Britton (Anchorage)**Last report date:** 11/17/99

**Site name(s):** Luna

**Site type:** Prospect

**ARDF no.:** CH101

**Latitude:** 67.76

**Quadrangle:** CH D-5

**Longitude:** 149.16

**Location description and accuracy:**

This site is at an elevation of about 3,900 feet at the head of Robert Creek (secs. 20, 21, T. 34 N., R. 7 W., of the Fairbanks Meridian); It is approximately 6 1/2 miles north of Horace Mountain and a mile north of the Hurricane-Diane prospect (CH062). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu

**Other:** Ag, Au, Co, Zn

**Ore minerals:** Arsenopyrite, bornite, chalcopyrite, magnetite, pyrite, pyrrhotite, sphalerite

**Gangue minerals:**

**Geologic description:**

The Luna prospect is one of a number of copper occurrences that comprise the Chandalar copper belt. Early reports (DeYoung, 1978; Cobb and Cruz, 1983) described this prospect, together with the Hurricane-Diane property, as small deposits of skarn-hosted chalcopyrite in the Devonian Skajit Limestone intruded by a small greenstone-greenschist body. Later reports (Newberry and others, 1986) indicated they are separate prospects. Newberry and others (1986) included them in a group of skarn deposits northwest of and related to the Devonian(?) granitic plutons in the Horace Mountains. Many of these skarns exhibit both garnet and pyroxene prograde and epidote and actinolite retrograde mineral assemblages, and Newberry and others (1986) stated that their mineralogy, mineralization, and alteration of these skarns categorize them as continental-margin, porphyry-related copper skarns. Newberry and others (1986) classified the Luna deposit as a Cu-Zn-Ag skarn, and Newberry and others (1997) classify it as a calcic Cu skarn. A hand specimen of skarn from the Luna deposit contains garnet, pyroxene, epidote, actinolite, chalcopyrite, pyrite, sphalerite, and magnetite (Newberry and others, 1986). An analysis of the hand specimen gave values of 6.3 percent Cu, 32 ppm Ag, 0.57 percent Zn and 0.07 percent Pb.

More detailed descriptions (Ventures Resource Corporation, 1998) of the mineralization at Luna indicate that the primary mineral occurrence is stratabound and consists princi-

pally of chalcopyrite and lesser amounts of bornite and sphalerite in calc-silicate altered schists associated with small bodies of meta-diorite and granodiorite. Early workers (DeYoung, 1978) interpreted the occurrence as a skarn deposit. Nicholson (1990) suggested that at least parts of the mineralized package have volcanogenic affinities and noted the presence of massive, stringer, and disseminated sulfides. Mineralization also apparently occurs in 'distal' Cu-Zn skarns at Luna as well. Ventures Resource Corporation (1998) describes the deposit as including: (a) stratabound volcanogenic sulfides; (b) strata-controlled massive pyrite-chalcopyrite-magnetite skarns; (c) strata- and shear-controlled massive chalcopyrite-bornite-sphalerite replacements; and (d) a 2-foot-thick massive pyrrhotite-arsenopyrite replacement(?) in marble. Host rocks are described as chloritic calc-schist, quartz-sericite calc-schist, and skarn. Based on an extrapolation from mapping by Dillon and others (1996) a short distance south in the Chandalar C-5 quadrangle, these schist units may be Ordovician to Cambrian(?) in age. The schist units are isoclinally folded along shallow-plunging northeast-trending axes and form a broad synform which follows Roberts Creek. The Ventures Resource Corporation geologic map (1998, URL <http://www.venturesresource.com/>) shows meta-andesite and diorite units at the center of the sulfide occurrences. These units are in thrust contact with Devonian Ska-jit Limestone to the west.

**Alteration:**

Chloritic alteration of schists and silicic alteration of meta-intrusive dikes and sills.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Cu skarn deposits; Kuroko massive sulfide(?) (Cox and Singer, 1986; models 18b and 28a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18b; 28a(?)

**Production Status:** None**Site Status:** Active**Workings/exploration:**

The land (and the original claims) have been acquired by Doyon, Limited, an Alaska Native corporation, via its Alaska Native Claims Settlement Act selections. These Doyon lands are currently being evaluated by Ventures Resource Corporation under an agreement with Doyon. Previous work has been primarily surface exploration although five diamond drill holes, totaling 1,605 feet, were drilled in 1978. Soil sampling in 1970 to 1974 reportedly has covered less than 30 percent of the mineralized trend. Some limited trenching has also been done. Three of the five drill holes are reported to have mineralized intercepts, with one reported interval of 6 feet of 6.3 percent Cu, 0.5 percent Co,

and 1.1 ounces of silver per ton (Ventures Resource Corporation, 1998). A 30 foot sample from outcrops on a 'rubble-strewn ridge' on the property is reported to assay 3.4 percent Cu, 3.1 percent Zn, 0.1 percent Co, 1.4 ounces of silver per ton and 0.014 ounce of gold per ton. Selected rock samples are reported to contain values ranging from 0.86 percent to 20.1 percent Cu, 0.19 percent to 29.2 percent Zn, 0.55 to 5.07 ounces of silver per ton, 0.01 to 0.15 ounce of gold per ton, and 0.02 to 0.41 percent Co (Ventures Resource Corporation, 1998).

**Production notes:****Reserves:**

Nicholson (1990) estimated that the deposit (including VMS and skarn mineralization) contains 2.1 million tons averaging 0.54 percent Cu, 0.17 percent Zn and 0.01 ounce of silver per ton.

**Additional comments:**

See also: Hurricane-Diane (CH062), Gayle (CH091), Ginger (CH060), and Evelyn Lee (CH059).

Alaska Kardex No. 031-053 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Maas, 1987 (USBM OFR 10-87); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983; Newberry and others, 1986; Nicholson, 1990; Ventures Resource Corporation, 1998; Newberry and others, 1997; Swainbank and others, 1998.

**Primary reference:** Ventures Resource Corporation, 1998

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Io

**Site type:** Prospect

**ARDF no.:** CH102

**Latitude:** 67.80

**Quadrangle:** CH D-5

**Longitude:** 149.05

**Location description and accuracy:**

The Io prospect is at an elevation of about 4,800 feet just above the headwaters of Robert Creek about 4 1/2 miles south of the confluence of Quartz Creek and the North Fork Chandalar River (SE1/4 sec. 2, T. 34 N., R. 7 W., of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Ag, Cu, Pb, Zn

**Other:** Au(?)

**Ore minerals:** Chalcopyrite, galena, magnetite, pyrite, sphalerite

**Gangue minerals:**

**Geologic description:**

The Io prospect is one of a number of skarn deposits in the Chandalar area. Newberry and others (1986) classified this prospect as a Pb-Zn-Ag-Cu skarn and group it with a number of similar prospects that are northwest of and related to the Devonian(?) granitic plutons in the Horace Mountains. Many of these skarns exhibit both garnet and pyroxene prograde and epidote and actinolite retrograde mineral assemblages, and Newberry and others (1986) stated their characteristics place them in the category of continental-margin, porphyry-related copper skarns. They also suggest that the Pb-Zn-rich skarns represent distal concentrations surrounding the porphyry systems in the district. Newberry and others (1997) classify the Io prospect as a calcic Zn-Pb skarn and replacement body. A hand specimen of skarn from Io contains epidote, chlorite, actinolite, pyrite, galena, sphalerite, and magnetite (Newberry and others, 1986). Analysis of this specimen returned values of 12.6 percent Pb, 8.5 percent Zn, 0.04 percent Cu and 83 ppm Ag. In a listing posted on the Ventures Resource Corporation (currently exploring Doyon, Limited lands in the area under an agreement with Doyon, Limited) website (1998, URL <http://www.venturesresource.com/>) the Io prospect is classified as a Cu-Au prospect, although no supporting data are shown. The prospect is in an area underlain principally by Devonian Ska-jit Limestone and Hunt Fork Shale (DeYoung, 1978).

**Alteration:**

Calc-silicate.

**Age of mineralization:**

Devonian(?) based on reported Early Devonian Pb/Pb zircon ages from the associated Baby Creek batholith and Horace Mountain plutons (Dillon and others, 1996).

**Deposit model:**

Zn-Pb skarn deposits (Cox and Singer, 1986; model 18c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

18c

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Deimos (CH061), Ginger (CH060), Hurricane-Diane (CH062), Venus (CH065), Pilgrim (CH099), Mike (CH100), Vicki (CH097), Cindy (CH098), and Evelyn Lee (CH059).

**References:**

Newberry and others, 1986; Newberry and others, 1997; Ventures Resource Corporation, 1998.

**Primary reference:** Newberry and others, 1986

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Quartz Creek

**Site type:** Occurrence

**ARDF no.:** CH103

**Latitude:** 67.81

**Quadrangle:** CH D-5

**Longitude:** 149.16

**Location description and accuracy:**

The Quartz Creek occurrence is at an elevation of about 5,100 feet on a high ridge approximately 9 1/2 miles north of Horace Mountain and 5 miles southwest of the confluence of Quartz Creek and the North Fork Chandalar River (at the common corner of secs. 4, 5, T. 34 N., R. 7 W. and secs. 32, 33, T. 35 N., R. 7 W. of the Fairbanks Meridian). The location is accurate within a 1-mile radius.

**Commodities:**

**Main:** Cu

**Other:** Zn(?)

**Ore minerals:** Chalcopyrite(?), malachite

**Gangue minerals:** Goethite, quartz

**Geologic description:**

Mulligan (1974) described this occurrence as a quartz vein, about 2 inches thick, which cuts a chlorite schist. The vein contains minor goethite, malachite, and a trace of zinc (the zinc mineral is not specified). Float in the area contains traces of malachite and possibly chalcopyrite. The country rocks are Devonian black slate, phyllite, and phyllitic siltstone (Brosgé and Reiser, 1964). A body of greenstone is mapped about a mile to the east.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

Polymetallic veins(?) (Cox and Singer, 1986; model 22c)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

22c(?)

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Mulligan, 1974; Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; Cobb and Cruz, 1983.

**Primary reference:** Mulligan, 1974

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Chandalar Copper; Verna Creek****Site type:** Occurrence**ARDF no.:** CH104**Latitude:** 67.88**Quadrangle:** CH D-5**Longitude:** 149.12**Location description and accuracy:**

The occurrence is at an elevation of about 2,500 feet about 1/2 mile west of the North Fork Chandalar River and about 2 miles northwest of the confluence of Quartz Creek and the North Fork Chandalar River (SE1/4 sec. 4, T. 35 N., R. 7 W., of the Fairbanks Meridian). This site corresponds to loc. 15 in DeYoung (1978). The location is accurate within a 1-mile radius.

**Commodities:****Main:** Ag, Au, Cu**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

This occurrence is in an area mapped by Brosgé and Reiser (1964) as Hunt Fork Shale (black slate, phyllite, and phyllitic siltstone) with intercalated greenstones (schistose hornblende and/or pyroxene diorite and andesitic flows(?)). The prospect appears to be near a contact between these two units. Eight lode claims were located in 1968 with some prospecting reported through 1973. No other descriptive information is available.

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None**Site Status:** Inactive

**Workings/exploration:**

Prospecting.

**Production notes:****Reserves:****Additional comments:**

The name Verna Creek is the name shown for this occurrence in Maas (1987 [USBM OFR 10-87]) although there is no Verna Creek shown on the topographic map. Alaska Kardex No. 031-054 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

DeYoung, 1978; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** DeYoung, 1978

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Snowden Creek****Site type:** Occurrence**ARDF no.:** CH105**Latitude:** 67.76**Quadrangle:** CH D-6**Longitude:** 149.71**Location description and accuracy:**

The Snowden Creek occurrence is approximately 3 miles south-southwest of Snowden Mountain. It is near the 3,000-foot level of a ridge immediately north of lower Snowden Creek and overlooking the Dietrich River (sec. 24, T. 34 N., R. 10 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Cu**Other:** Gypsum**Ore minerals:** Chalcopyrite, gypsum, pyrite**Gangue minerals:** Calcite, graphite, quartz**Geologic description:**

This occurrence consists of: (a) a 6-inch-thick gypsum-calcite zone in shaley limestone which contains abundant fine-grained pyrite; and (b) vein quartz float that contains traces of graphite, pyrite, and chalcopyrite (Mulligan, 1974). Dillon and others (1988) mapped the country rocks as a Devonian igneous unit of diabase, gabbro, and diorite dikes and sills that is in contact with Middle Ordovician black, carbonaceous phyllite and meta-limestone. Calc-silicate hornfels occurs along the contact. Cr, Pb, Ni, and V were detected spectrographically in samples from the occurrence (Mulligan, 1974).

**Alteration:****Age of mineralization:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Mulligan, 1974; Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; U.S. Bureau of Mines, 1978.

**Primary reference:** Mulligan, 1974

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s):** Big Jim Creek (tributary to Dietrich River)

**Site type:** Occurrence

**ARDF no.:** CH106

**Latitude:** 67.86

**Quadrangle:** CH D-6

**Longitude:** 149.95

**Location description and accuracy:**

This site is at an elevation of about 3,500 feet, approximately 4 miles up Big Jim Creek on the ridge between the upper forks of the creek (NW1/4 sec. 13 and NE1/4 sec. 14, T. 35 N., R. 11 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:**

**Main:** Cu, Pb

**Other:**

**Ore minerals:** Copper sulfides and/or malachite-azurite, galena

**Gangue minerals:**

**Geologic description:**

This occurrence is described as galena and copper sulfides and/or malachite-azurite stains in Upper Devonian phyllite with some siltstone and sandstone (Brosgé and Reiser, 1964). No other descriptive information is available.

**Alteration:**

**Age of mineralization:**

**Deposit model:**

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:****Reserves:****Additional comments:**

This occurrence is located within Gates of the Arctic National Park.

**References:**

Brosgé and Reiser, 1964; Cobb, 1972 (MF 457); Cobb, 1976 (OFR 76-340); Grybeck, 1977; DeYoung, 1978; U.S. Bureau of Mines, 1978; Cobb and Cruz, 1983.

**Primary reference:** Brosgé and Reiser, 1964

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Trembley Creek; Kuyuktuvuk Creek****Site type:** Occurrence**ARDF no.:** CH107**Latitude:** 67.93**Quadrangle:** CH D-6**Longitude:** 149.88**Location description and accuracy:**

The occurrence is near the confluence of Trembley Creek and Kuyuktuvuk Creek about 1 1/2 miles west of the Dietrich River (NE1/4 sec. 19, T. 36 N., R. 10 W., of the Fairbanks Meridian). The location is accurate within a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Two claims were reported to have been located in 1963, and there is evidence of placer mining activity, principally along Kuyuktuvuk Creek (U.S. Bureau of Mines, 1973; Dillon, 1987). Country rocks in the area are shown by DeYoung (1978) to be principally Devonian limestone and siltstone, Pennsylvanian and Mississippian limestone, dolomite, shale, and conglomerate of the Lisburne Group and Kayak Shale, and Devonian Hunt Fork Shale. No other information is available on this occurrence.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Not determined

**Workings/exploration:**

Indications of placer mining activity noted along Kuyuktuvuk Creek above the mouth of Trembley Creek (U.S. Bureau of Mines, 1973; Dillon, 1987). Heiner and Wolff (1968) reported that claims were located at the mouth of Trembley Creek in 1963.

**Production notes:**

**Reserves:**

**Additional comments:**

This occurrence is located within Gates of the Arctic National Park. Alaska Kardex No. 031-51 (Kardex is a card file mining claim information system located at the State of Alaska DNR Public Information Center in Fairbanks).

**References:**

Heiner and Wolff, 1968; U.S. Bureau of Mines, 1973; DeYoung, 1978; Dillon, 1987; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Dillon, 1987

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Nutirwik Creek****Site type:** Occurrence**ARDF no.:** CH108**Latitude:** 67.95**Quadrangle:** CH D-6**Longitude:** 149.67**Location description and accuracy:**

The occurrence is approximately 4 miles above the mouth of Nutirwik Creek (sec. 18, T. 36 N., R. 9 W., of the Fairbanks Meridian). Nutirwik Creek is a west-flowing tributary to Dietrich River located about 10 miles north of Snowden Mountain. The location is accurate with a 1/2-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

The only descriptions of this occurrence are references by the U.S. Bureau of Mines (1973) and Dillon (1987) to evidence of placer mining activity and by the location of claims in 1976. The country rocks in the area are shown by DeYoung (1978) to be principally Devonian Hunt Fork Shale and Devonian to Silurian Skajit Limestone with lesser Devonian slate, phyllite, limestone, and siltstone. No descriptive information is available.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** Undetermined

**Site Status:** Not determined

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

**References:**

U.S. Bureau of Mines, 1973; DeYoung, 1978; Dillon, 1987; Maas, 1987 (USBM OFR 10-87).

**Primary reference:** Dillon, 1987

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

**Site name(s): Willow Creek (placer)****Site type:** Occurrence**ARDF no.:** CH109**Latitude:** 67.67**Quadrangle:** CH C-4**Longitude:** 148.99**Location description and accuracy:**

Willow Creek is a headwater tributary to Robert Creek and is approximately 7 to 8 miles north-northeast of the north end of Twin Lakes. The reference point is located between the mouth of Willow Creek and Little Spruce Creek, a small, south-flowing tributary to Willow Creek (sec. 19, T. 33 N., R. 6 W., of the Fairbanks Meridian). The precise location of the placer prospect on Willow Creek is not known. The location is accurate within a 1-mile radius.

**Commodities:****Main:** Au**Other:****Ore minerals:** Gold**Gangue minerals:****Geologic description:**

Reed (1938) reported that very good placer gold prospects were found in this creek in the early 1900s, although there is no information that would suggest these prospects were developed.

**Alteration:****Age of mineralization:**

Quaternary.

**Deposit model:**

Placer Au (Cox and Singer, 1986; model 39a)

**Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**

39a

**Production Status:** None

**Site Status:** Inactive

**Workings/exploration:**

**Production notes:**

**Reserves:**

**Additional comments:**

See also: Willow Creek (CH055).

**References:**

Reed, 1938.

**Primary reference:** Reed, 1938

**Reporter(s):** J.M. Britton (Anchorage)

**Last report date:** 11/17/99

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