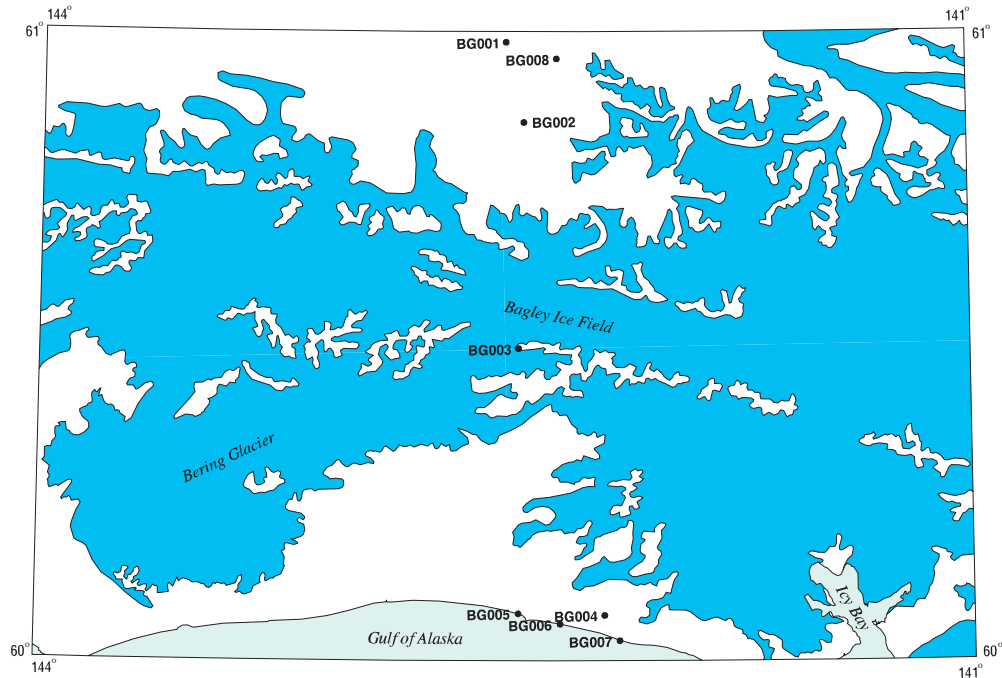


Bering Glacier quadrangle

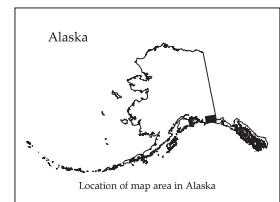
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences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



*Distribution of mineral occurrences in the Bering Glacier
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, telephone (907) 786-7448. This compilation is authored by:

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Sequim, WA



This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Site name(s): Bearhole Creek**Site type:** Occurrence**ARDF no.:** BG001**Latitude:** 60.9832**Quadrangle:** BG D-4**Longitude:** 142.4983**Location description and accuracy:**

This occurrence is on the north side of the valley of 'Bearhole Creek', which is not named on the D-4 and adjacent D-5 quadrangles (Brabb and Miller, 1962) at an elevation of about 4,500 feet and 1.7 miles west-northwest of peak 6560. It is in the SW 1/4 of section 24, T 10 S, R 16 E of the Copper River Meridian. The location is probably accurate to within a half mile. It is locality 1 of Cobb (1972 [MF 373]; 1979 [OF 79-1246]).

Commodities:**Main:** Cu**Other:****Ore minerals:** Chalcopyrite, pyrite**Gangue minerals:** Feldspar, graphite, quartz**Geologic description:**

A 20-foot-wide mineralized zone in Mesozoic metasedimentary rocks contains as much as 20 percent pyrite and graphite and traces of chalcopyrite (Brabb and Miller, 1962). The zone contains quartz-feldspar-graphite veins; it is light colored and visible from a distance. Brabb and Miller (1962) observed similar mineralization locally on the south side of Bearhole Creek.

Alteration:

Light color may indicate oxidation.

Age of mineralization:

Tertiary? The mineralized zone may trend north-south across Bearhole Creek and crosscut the host metasedimentary rocks. High-grade metamorphism in this area is Early Tertiary in age (Hudson and Plafker, 1982).

Deposit model:

Shear zone with quartz-feldspar-graphite veins?

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Reconnaissance surface observations have been completed at this locality (Brabb and Miller, 1962).

Production notes:

Reserves:

Additional comments:

This occurrence is within the Wrangell-St. Elias National Park.

References:

Brabb and Miller, 1962; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Hudson and Plafker, 1982.

Primary reference: Brabb and Miller, 1962

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

Site name(s): Unnamed (head of Martin Creek)**Site type:** Occurrence**ARDF no.:** BG002**Latitude:** 60.8559**Quadrangle:** BG D-4**Longitude:** 142.4401**Location description and accuracy:**

This occurrence is on the south end of the smaller of two lakes at the head of Martin Creek. It is at an elevation of about 4,850 feet in the SW 1/4 section 5, T 12 S, R 17 E, of the Copper River Meridian. It is locality 2 of Cobb (1972 [MF 373]; 1979 [OF 79-1246]). The larger of the two lakes at the head of Martin Creek is mislabeled 'Slender Lake' on the 1984 edition of the U.S. Geological Survey Bering Glacier D-4 quadrangle map. Slender Lake is the the headwaters of Bearhole Creek (Brabb and Miller, 1962).

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

A quartz vein crosscutting metamorphosed flysch of the Cretaceous Valdez Group contains trace amounts of gold at this locality. A 500-gram sample of the vein yielded a flake of free gold (about 0.0001 gram) after being crushed and panned (Brabb and Miller, 1962).

Alteration:**Age of mineralization:**

Tertiary. The quartz vein crosscuts Valdez Group flysch that was metamorphosed in the Early Tertiary (Hudson and Plafker, 1982).

Deposit model:

Low-sulfide Au-quartz vein (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:

Reconnaissance surface observations have been completed at this locality (Brabb and Miller, 1962).

Production notes:

Reserves:

Additional comments:

This occurrence is within the Wrangell-St. Elias National Park.

References:

Brabb and Miller, 1962; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Hudson and Plafker, 1982.

Primary reference: Brabb and Miller, 1962

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

Site name(s): Natural Arches (north of Bering Glacier)

Site type: Occurrence

ARDF no.: BG003

Latitude: 60.4962

Quadrangle: BG B-4

Longitude: 142.4555

Location description and accuracy:

This occurrence is at the west end of the ridge between Bagley Ice Field and upper Bering Glacier. The map site is at an elevation of about 4,400 feet in the SW1/4 section 8, T 16 S, R 17 E, of the Copper River Meridian. This is locality 3 of Cobb (1972 [MF 373]; 1979 [OF 79-1246]). The location is probably accurate to within one-half mile.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, copper (native), malachite

Gangue minerals: Quartz

Geologic description:

At this occurrence, native copper occurs in mafic volcanic rocks, and azurite and malachite occur in quartz veins that cut the volcanic rocks (Brabb and Miller, 1962). The volcanic rocks are part of the Lower Tertiary Orca Group (Hudson and Plafker, 1982).

Alteration:

Oxidation.

Age of mineralization:

Tertiary. The mineralization postdates the Early Tertiary age of the host volcanic rocks.

Deposit model:

Native copper in mafic volcanic rocks.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Reconnaissance surface observations have been completed at this locality (Brabb and Miller, 1962).

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

This occurrence is very close to the southern boundary of the Wrangell-St. Elias National Park.

References:

Brabb and Miller, 1962; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Hudson and Plafker, 1982.

Primary reference: Brabb and Miller, 1962

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

Site name(s): White River**Site type:** Mine**ARDF no.:** BG004**Latitude:** 60.0721**Quadrangle:** BG A-4**Longitude:** 142.1798**Location description and accuracy:**

Placer gold mining occurred locally along a 2-mile segment of White River starting about 2 miles upstream of the mouth. The map site is at the approximate midpoint of this segment at an elevation of about 75 feet in the N1/2 section 28, T 21 S, R 19 E, of the Copper River Meridian. This is locality 4 of Cobb (1972 [MF 373]; 1979 [OF 79-1246]). The location is probably accurate to within 1 mile.

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

Placer gold occurs in glaciofluvial bench deposits along this part of White River. The gold is mostly fine, light, and flaky, but some small nuggets that weighed as much as 0.15 ounce were also recovered (Maddren, 1914). The deposits are 15 to 40 feet above the river, 8 or more feet thick, and as much as 500 feet wide (Brooks, 1912; Maddren, 1914). Hydraulic mining took place as early as 1908 and continued in most years up to 1916 (Maddren, 1914; Cobb, 1979 [OF 79-1246]). A 9,000-foot-long flume was constructed in 1913 to enable larger scale hydraulic operations. The present river also contains placer gold, but it was not accessible to mining. The gold may be derived from reworking of marine-glacial deposits of the Cenozoic Yakataga Formation (Reimnitz and Plafker, 1976). The White River placers produced a small part of the 15,000 to 16,000 ounces of gold estimated to have been recovered in the Yakataga district (Cobb, 1979 [OF 79-1246]). Bedrock in the White River drainage is Tertiary sedimentary rocks (Miller, 1971).

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:

Hydraulic mining took place as early as 1908 and continued in most years up to 1916 (Maddren, 1914; Cobb, 1979 [OF 79-1246]). A 9,000-foot-long flume was constructed in 1913 to enable larger scale hydraulic operations.

Production notes:

The White River placers produced a small part of the 15,000 to 16,000 ounces of gold estimated to have been recovered in the Yakataga district (Cobb, 1979 [OF 79-1246]).

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

Brooks, 1912; Maddren, 1914; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Miller, 1971; Reimnitz and Plafker, 1976.

Primary reference: Maddren, 1914

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

Site name(s): Yakataga (west of Cape Yakataga)

Site type: Mine

ARDF no.: BG005

Latitude: 60.0747

Quadrangle: BG A-4

Longitude: 142.4561

Location description and accuracy:

This beach placer mine area is the first 2 miles of the present Gulf of Alaska beach west of Cape Yakataga. The coordinate location is the approximate midpoint of this beach segment. The location is accurate. It is included in locality 5 of Cobb (1972 [MF 373]; 1979 [OF 79-1246]).

Commodities:

Main: Au, Ti

Other: Cr

Ore minerals: Chromite, copper (native), gold, hematite, ilmenite, magnetite, rutile

Gangue minerals: Amphibole, garnet, monazite, pyroxene, sphene, zircon

Geologic description:

The placer gold in Yakataga-area beaches was discovered in 1897 or 1898, and small-scale mining started in 1899 (Madden, 1914). Rucker and sluice operations continued to WW II. Drill prospecting of raised beaches occurred after WW II (Thomas and Berryhill, 1962), as did sporadic attempts at small-scale mining. Most of the post-WW II mining was west of Cape Yakataga on this segment of the beach (Miller, 1971). The gold in the Yakataga area, naturally concentrated in heavy-mineral accumulations by storm waves, is fine and flat. The other heavy minerals include amphibole, garnet, chromite, native copper, hematite, magnetite, pyroxene, rutile, sphene, ilmenite, zircon, and probably some monazite (Madden, 1914; Thomas and Berryhill, 1962; Foley and others, 1995).

The iron and titanium oxide contents of reconnaissance samples of beach sand from the Yakataga area were reported by Thomas and Berryhill (1962). These samples contained as much as 6.2 pounds of iron per ton but mostly less than 2 pounds of iron per ton. Their titanium oxide content was less than 2 pounds per ton in the magnetic fraction and as much as 7.3 pounds, but mostly less than 2 pounds per ton in the non-magnetic fraction.

Foley and others (1995) collected 32 samples at 18 locations, including some raised beaches, along this segment of the Yakataga shoreline. Spiral concentrates from these samples contained less than 0.028 grams (16 samples) to 0.903 grams of gold per ton, 0.52 to 2.32 percent Ti, and 243 to 7683 ppm Zr. A heavy-mineral concentrate from one

of these samples (4.79 weight percent of the original samples) contained 0.51 percent magnetite, 0.230 percent ilmenite, 2.519 percent garnet, 0.053 percent rutile, and 1.90 percent other minerals. Flotation concentrates from two samples contained 0.198 and 14.787 grams of gold per ton, 0.056 and less than 0.003 gram platinum per ton, and 0.037 and 0.042 gram palladium per ton. The placer gold in the Yakataga beaches may be derived from reworking of marine-glacial deposits of the Cenozoic Yakataga Formation (Reimnitz and Plafker, 1976).

Alteration:**Age of mineralization:**

Quaternary.

Deposit model:

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

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

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale rocker and sluice operations took place from 1899 to WW II. Drill prospecting of raised beaches occurred after WW II (Thomas and Berryhill, 1962), as did sporadic attempts at small-scale mining. Most of the post-WW II mining was west of Cape Yakataga on this segment of the beach (Miller, 1971).

Production notes:

A part of the 15,000 to 16,000 total ounces of gold produced in the Yakataga district was recovered from this area. Mining after WW II produced a small amount of gold, perhaps less than 100 ounces, from this segment of the Yakataga beach.

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

Maddren, 1914; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Thomas and Berryhill, 1962; Miller, 1971; Reimnitz and Plafker, 1976; Foley and others, 1995.

Primary reference: Foley and others, 1995

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

Site name(s): Yakataga (between Cape Yakataga and White River)

Site type: Mine

ARDF no.: BG006

Latitude: 60.0583

Quadrangle: BG A-4

Longitude: 142.3224

Location description and accuracy:

This beach placer mine area is the 7-mile long segment of the present Gulf of Alaska beach from Cape Yakataga to the mouth of White River. The map site is the approximate midpoint of this beach segment. The location is accurate. It was included in locality 5 of Cobb (1972 [MF 373]; 1979 [OF 79-1246]).

Commodities:

Main: Au, Ti

Other: Cr

Ore minerals: Chromite, copper (native), gold, hematite, ilmenite, magnetite, rutile

Gangue minerals: Amphibole, garnet, monazite, pyroxene, sphene, zircon

Geologic description:

The placer gold in Yakataga-area beaches was discovered in 1897 or 1898, and small-scale mining started in 1899 (Maddren, 1914). Rocker and sluice operations continued to WW II. Drill prospecting of raised beaches occurred after WW II (Thomas and Berryhill, 1962), as did sporadic attempts at small-scale mining. Most of the post-WW II mining was west of Cape Yakataga (see BG005; Miller, 1971). The gold in the Yakataga area, naturally concentrated in heavy-mineral accumulations by storm waves, is fine and flat. Other heavy minerals include amphibole, garnet, chromite, native copper, hematite, magnetite, pyroxene, rutile, sphene, ilmenite, zircon, and probably some monazite (Maddren, 1914, Thomas and Berryhill, 1962; Foley and others, 1995).

The iron and titanium oxide contents of reconnaissance samples of beach sand from the Yakataga area were reported by Thomas and Berryhill (1962). These samples contained as much as 6.2 pounds of iron per ton but mostly less than 2 pounds of iron per ton. Their titanium oxide content was less than 2 pounds per ton in the magnetic fraction and as much as 7.3 pounds, but mostly less than 2 pounds, per ton in the non-magnetic fraction.

Foley and others (1995) processed 94 samples from 51 locations, including some raised beaches, along this segment of the Yakataga shoreline. Spiral concentrates from these samples contained less than 0.028 grams (64 samples) to 0.790 grams gold per ton (one outlier sample was reported to contain 12.219 grams of gold per ton), 0.34 to 1.65 percent

titanium, and 95 to 2029 ppm zirconium. Heavy-mineral concentrates from five samples (3.91 to 7.47 weight percent of the original samples) contained 0.001 to 0.031 percent magnetite, 0.106 to 0.232 percent ilmenite, 0.193 to 0.629 percent garnet, 0.001 to 0.032 percent rutile, and 3.32 to 7.22 percent other minerals. Flotation concentrates from two samples contained 7.253 and 15.86 grams of gold per ton, 0.008 and 0.0085 gram platinum per ton, and 0.017 and 0.056 gram of palladium per ton. The placer gold in the Yakataga beaches may be derived from reworking of marine-glacial deposits of the Cenozoic Yakataga Formation (Reimnitz and Plafker, 1976).

Alteration:**Age of mineralization:**

Quaternary.

Deposit model:

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

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

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale rocker and sluice operations took place from 1899 to WW II. Drill prospecting of raised beaches occurred after WW II (Thomas and Berryhill, 1962), as did sporadic attempts at small-scale mining. Most of the post-WW II mining was west of Cape Yakataga (Miller, 1971).

Production notes:

A part of the 15,000 to 16,000 total ounces of gold produced in the Yakataga district was recovered from this area.

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

Maddren, 1914; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Thomas and Berryhill, 1962; Miller, 1971; Reimnitz and Plafker, 1976; Foley and others, 1995.

Primary reference: Foley and others, 1995

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

Site name(s): Yakataga (east of White River)**Site type:** Mine**ARDF no.:** BG007**Latitude:** 60.0319**Quadrangle:** BG A-4**Longitude:** 142.1318**Location description and accuracy:**

This mine area is the first 6-mile long segment of the present Gulf of Alaska beach east of the mouth of White River to Lawrence Creek. The map site is the approximate mid-point of this beach segment. The location is accurate. It is included in locality 5 of Cobb (1972 [MF 373]; 1979 [OF 79-1246]).

Commodities:**Main:** Au, Ti**Other:** Cr**Ore minerals:** Chromite, copper (native), gold, hematite, ilmenite, magnetite, rutile**Gangue minerals:** Amphibole, garnet, monazite, pyroxene, sphene, zircon**Geologic description:**

The placer gold in Yakataga-area beaches was discovered in 1897 or 1898, and small-scale mining started in 1899 (Maddren, 1914). Rocker and sluice operations continued to WW II. Drill prospecting of raised beaches occurred after WW II (Thomas and Berryhill, 1962), as did sporadic attempts at small-scale mining. Most of the post-WW II mining was west of Cape Yakataga (see BG005; Miller, 1971). The gold in the Yakataga area, naturally concentrated in heavy-mineral accumulations by storm waves, is fine and flat. Other heavy minerals include amphibole, garnet, chromite, native copper, hematite, magnetite, pyroxene, rutile, sphene, ilmenite, zircon, and probably some monazite (Maddren, 1914, Thomas and Berryhill, 1962; Foley and others, 1995).

The iron and titanium oxide contents of reconnaissance samples of beach sand from the Yakataga area were reported by Thomas and Berryhill (1962). These samples contained as much as 6.2 pounds of iron per ton but mostly less than 2 pounds of iron per ton. Their titanium oxide content was less than 2 pounds per ton in the magnetic fraction and as much as 7.3 pounds, but mostly less than 2 pounds, per ton in the non-magnetic fraction.

Foley and others (1995) processed 94 samples from 69 locations, including some raised beaches, along this segment of the Yakataga shoreline. Spiral concentrates from these samples contained less than 0.028 gram (72 samples) to 0.790 gram of gold per ton (one outlier sample was reported to contain 12.219 grams of gold per ton), 0.31 to 3.66 percent

titanium, and 78 to 6867 ppm zirconium. Heavy-mineral concentrates from six samples (8.42 to 18.20 weight percent of the original samples) contained 0.008 to 0.437 percent magnetite, 0.250 to 2.310 percent ilmenite, 0.631 to 4.780 percent garnet, 0.008 to 0.271 percent rutile, and 7.22 to 12.38 percent other minerals. Flotation concentrate from one sample contained 3.499 grams of gold per ton, less than 0.003 gram of platinum per ton, and 0.102 gram of palladium per ton. The placer gold in the Yakataga beaches may be derived from reworking of marine-glacial deposits of the Cenozoic Yakataga Formation (Reimnitz and Plafker, 1976).

Alteration:**Age of mineralization:**

Quaternary.

Deposit model:

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

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

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale rocker and sluice operations took place from 1899 to WW II. Drill prospecting of raised beaches occurred after WW II (Thomas and Berryhill, 1962), as did sporadic attempts at small-scale mining. Most of the post-WW II mining was west of Cape Yakataga (Miller, 1971).

Production notes:

A part of the 15,000 to 16,000 total ounces of gold produced in the Yakataga district was recovered from this area.

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

Maddren, 1914; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Thomas and Berryhill, 1962; Miller, 1971; Reimnitz and Plafker, 1976; Foley and others, 1995.

Primary reference: Foley and others, 1995

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

Site name(s): Kiagna River**Site type:** Prospect**ARDF no.:** BG008**Latitude:** 60.9568**Quadrangle:** BG D-4**Longitude:** 142.3341**Location description and accuracy:**

Placer gold prospects occur along the upper part of Kiagna River. The location arbitrarily chosen to represent these prospects is on the river at the mouth of Martin Creek, a west tributary. The location is probably only accurate to within several miles. Cobb (1972 [MF 373]; 1979 [OF 79-1246]) included information about these prospects under the name 'Kiagna River.'

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

Moffit (1916, 1918) reported that placer gold was known along upper parts of Kiagna River since about 1904. A small stampede to the area occurred in 1914, but little gold was probably produced. Valley glaciers have occupied the Kiagna River drainage. Bedrock in the area mostly consists of Paleozoic and Mesozoic metasedimentary and plutonic rocks (Hudson and Plafker, 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: Inactive

Workings/exploration:

Small-scale prospecting, probably by shovel and pan, has occurred in the area.

Production notes:

Reserves:

Additional comments:

This area is within the Wrangell-St. Elias National Park.

References:

Moffit, 1916; Moffit, 1918; Cobb, 1972 (MF 373); Cobb, 1979 (OF 79-1246); Hudson and Plafker, 1982.

Primary reference: Moffit, 1916

Reporter(s): Travis L. Hudson

Last report date: 12/12/01

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