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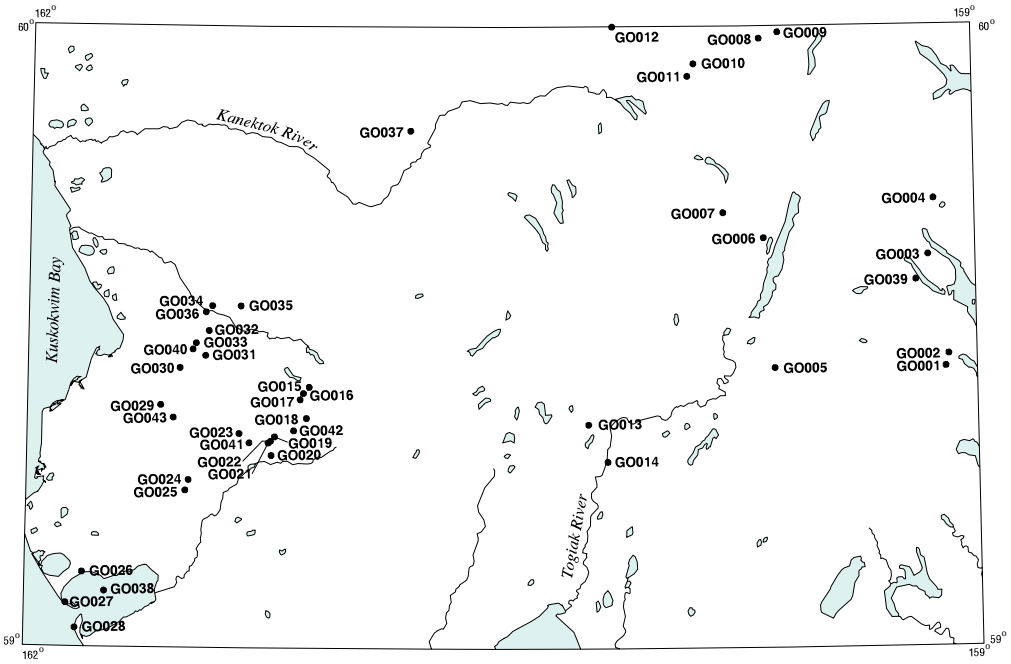
Alaska Resource Data File

Goodnews Bay 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 Goodnews Bay 1:250,000-scale quadrangle, Alaska

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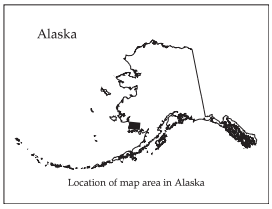

OPEN-FILE REPORT 01-270

Site name(s): Unnamed (southwest of Sunshine Valley)

Site type: Occurrence

ARDF no.: GO001

Latitude: 59.45 **Quadrangle:** GO B-1

Longitude: 159.10

Location description and accuracy:

This occurrence is on the ridge southwest of lower Sunshine Valley, near the north end of Lake Aleknagik. It is approximately located, perhaps within a mile. For this record, the map site is at an elevation of 1,000 feet at the head of an unnamed creek, just south of the center of section 25, T 8 S, R 58 W, of the Seward Meridian.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Pyrite

Gangue minerals: Quartz

Geologic description:

The ridge in the area of this occurrence is underlain by two small granitic stocks that sharply crosscut and thermally metamorphose Mesozoic sedimentary country rocks; other plutons may be present in the subsurface of the area (Mertie, 1938; Kilburn and others, 1993). A general area of mineralization and its relation to intrusive rocks on the ridge southwest of Sunshine Valley was originally reported by Mertie (1938, p. 88). This occurrence is in the contact zone of the easternmost of the two exposed plutons. Silicified and oxidized samples of argillite contained anomalous concentrations of Ag, As and Cu (Gray and others, 1992; Kilburn and others, 1993). The contact zone generally is iron-stained and silicified. Weakly mineralized hornfels contains some disseminated pyrite and small quartz-pyrite veinlets. Stream sediment and heavy mineral concentrate in the area contain anomalous concentrations of As, Au, Ba, Bi, Hg, Mo, Pb, Sn, W, and Zn, especially in streams headwatered near the granitic plutons (Cieutat and others, 1988).

Alteration:

Silicification and oxidation.

Age of mineralization:

Late Cretaceous or Early Tertiary. Mineralization is probably related to the granitic plu-

tons in the area, which are part of a regionally extensive Upper Cretaceous and Lower Tertiary plutonic suite. K/Ar ages for samples collected from the western stock on this ridge are 69.5 2.1 Ma on biotite and 63.4 1.9 Ma on hornblende (Hoare and Coonrad, 1978).

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:
Surface reconnaissance geochemical sampling has been completed in the area (Kilburn and others, 1993).

Production notes:

Reserves:

Additional comments:
This occurrence is within Wood-Tikchik State Park.

References:
Mertie, 1938; Hoare and Coonrad, 1978; Cieutat and others, 1988; Gray and others, 1992; Kilburn and others, 1993.

Primary reference: Kilburn and others, 1993

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Sunshine Valley

Site type: Occurrence

ARDF no.: GO002

Latitude: 59.47 **Quadrangle:** GO B-1

Longitude: 159.09

Location description and accuracy:

Sunshine Valley is at the north end of Lake Aleknagik. This placer occurrence is very approximately located, perhaps within a few miles, inasmuch as placer gold is only reported to be from streams that drain the southwest side of Sunshine Valley. For this record, the map site is at the mouth of an unnamed creek, where it enters Sunshine Valley, in the E1/2 of section 23, T 8 S, R 58 W, of the Seward Meridian. This occurrence was included by Hoare and Cobb (1977) under the name 'Sunshine Valley'.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Mertie (1938, p. 88) reported a general area of lode mineralization and its relation to granitic stocks on the ridge southwest of Sunshine Valley (GO001), and noted that some placer gold had been found in the streams that drain eastward into Sunshine Valley from this ridge. This occurrence is arbitrarily located on the drainage that heads against the area of lode mineralization.

Alteration:

Age of mineralization:

Holocene.

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: None

Site Status: Inactive

Workings/exploration:
Reconnaissance geochemical sampling has been completed in the area.

Production notes:

Reserves:

Additional comments:
This occurrence is within Wood-Tikchik State Park.

References:
Mertie, 1938; Hoare and Cobb, 1977.

Primary reference: Mertie, 1938

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Elva Lake

Site type: Occurrence

ARDF no.: GO003

Latitude: 59.63 **Quadrangle:** GO C-1

Longitude: 159.15

Location description and accuracy:

Elva Lake is a small lake on the upland between Little Togiak Lake and Amakuk Arm of Lake Nerka. This occurrence is along the drainage that enters Elva Lake from the north. It is very approximately located, perhaps within miles. The map site is on Elva Creek about 0.6 mile northwest of Elva Lake, in the SE1/4 of section 28, T 6 S, R 58 W, of the Seward Meridian. It was included by Hoare and Cobb (1977) under the name 'Lake Elva'.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Eakins (1968, p. 18) reported that placer gold was found in streams entering Lake Elva. This occurrence is arbitrarily located on the only stream entering from the north or upper end of Elva Lake. Bedrock in the area is Mesozoic sedimentary and volcanic rocks (Hoare and Coonrad, 1978).

Alteration:

Age of mineralization:

Holocene.

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: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
This occurrence is in Wood-Tikchik State Park.

References:
Eakins, 1968; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Eakins, 1968

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (northwest of Rainbow Basin)

Site type: Occurrence

ARDF no.: GO004

Latitude: 59.72 **Quadrangle:** GO C-1

Longitude: 159.13

Location description and accuracy:

Rainbow Basin is a lowland between the drainage at the head of Amakuk Arm of Lake Nerka to the west and the Golden Horn segment of Lake Beverly to the east. This approximately located occurrence is in the uplands on the north side of Rainbow Basin. The map site is on an unnamed creek at an elevation of about 700 feet, in the NW1/4 of section 27, T 5 S, R 58 W, of the Seward Meridian. It is area 1 of Kilburn and others (1992). The location possibly is accurate within a mile.

Commodities:

Main: Mo?

Other: Au?

Ore minerals: Arsenopyrite, pyrite

Gangue minerals: Quartz

Geologic description:

A highly oxidized, Cretaceous or Tertiary granitic stock surrounded by iron-stained argillite hornfels underlies the headwaters of a stream draining south to Rainbow Basin. The occurrence described in this record is about 2 miles northwest of Rainbow Basin (Kilburn and others, 1992). It consits of hornfels that contains disseminated sulfides and is cut by arsenopyrite- and pyrite-bearing quartz veins and stockworks. Individual veins are up to 1/4 inch thick. Thin felsic dikes cut the mineralized veins in places. Float samples of hornfels, silicified hornfels, and sulfide-bearing veinlets collected at the head of the drainage contain up to 1.1 ppm Ag, greater than 3,800 ppm As, 1.35 ppm Au, 400 ppm Bi, 780 ppm Cu, 21 ppm Mo, 303 ppm Ni, 64 ppm Sb, and 20 ppm Sn (Kilburn and others, 1992).

Alteration:

Silicification and oxidation.

Age of mineralization:

Probably Late Cretaceous or Early Tertiary. Mineralization is probably related to the

granitic plutons in the area, which are inferred to be part of a regionally extensive Upper Cretaceous and Lower Tertiary plutonic suite (Hoare and Coonrad, 1978).

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:
Reconnaissance geochemical sampling has been completed in the area.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wood-Tikchik State Park.

References:
Kilburn and others, 1992.

Primary reference: Kilburn and others, 1992

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (between Togiak River and Ongivinuck River)

Site type: Occurrence

ARDF no.: GO005

Latitude: 59.45 **Quadrangle:** GO B-2

Longitude: 159.64

Location description and accuracy:

This occurrence is between the Togiak River and Ongivinuck River basins, about 8 km south of Togiak Lake. It is area 6 of Kilburn and others (1992) and is approximately located, perhaps within 1 or 2 miles. For this record, the map site is at an elevation of about 1,350 feet at the head of an unnamed creek, in the NW1/4 of section 34, T 8 S, R 61 W, of the Seward Meridian.

Commodities:

Main: Au

Other: Ag, As, Sb

Ore minerals:

Gangue minerals: Quartz

Geologic description:

This occurrence is assumed to be within a Cretaceous or Tertiary granitic stock and surrounding hornfels that underlie this area (Hoare and Coonrad, 1978). Samples of diorite and hornfels contain up to greater than 10 ppm Hg (Coonrad and others, 1978). Quartz veinlets that occur within and parallel to an altered mafic dike that cuts diorite contain up to 0.23 ppm Ag, 0.25 ppm Au, 1.4 ppm Hg, and 60 ppm Sb (Kilburn and others, 1992); the host mafic dike contains 13.4 ppm Hg.

Alteration:

Silicification and oxidation.

Age of mineralization:

Probably Late Cretaceous or Early Tertiary. Mineralization may be related to the granitic pluton in the area, which is inferred to be part of a regionally extensive Upper Cretaceous and Lower Tertiary plutonic suite (Hoare and Coonrad, 1978).

Deposit model:

Epithermal mercury

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Reconnaissance geochemical rock sampling has been completed in the area.

Production notes:

Reserves:

Additional comments:

References:
Coonrad and others, 1978; Hoare and Coonrad, 1978; Kilburn and others, 1992.

Primary reference: Kilburn and others, 1992

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (west of Togiak Lake)

Site type: Occurrence

ARDF no.: GO006

Latitude: 59.659 **Quadrangle:** GO C-2

Longitude: 159.672

Location description and accuracy:

This occurrence is in the uplands along the west side of Togiak Lake. The map site is at an elevation of about 2,250 feet on a saddle 1/2 mile north-northwest of a local summit with an elevation of 3,547 feet. The location is probably accurate within 1/2 mile. It is included in Hoare and Cobb (1977) under the name 'Togiak Lake'.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, malachite

Gangue minerals: Quartz

Geologic description:

The upland between Togiak Lake and Kemuk River is cored by a large, Cretaceous(?) granitic pluton with a well-developed hornfels aureole (Hoare and Coonrad, 1978). Many stream-sediment samples in this area contain anomalous amounts of copper and manganese (Cieutat and others, 1988). At this location, along the east contact of the granitic pluton, chalcopyrite and malachite occur in a small quartz vein cutting quartz diorite (Hoare and Cobb, 1977, p. 49).

Alteration:

Silicification.

Age of mineralization:

Probably Late Cretaceous. Mineralization is probably related to the granitic pluton in the area, which is part of a regionally extensive Upper Cretaceous and Lower Tertiary plutonic suite. K/Ar ages for granitic samples from near this locality are 63.7 2 Ma on biotite and 67.5 3 Ma on hornblende (Hoare and Coonrad, 1978).

Deposit model:

Vein

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

Production Status: No

Site Status: Inactive

Workings/exploration:
Reconnaissance stream-sediment sampling has been completed in the area.

Production notes:

Reserves:

Additional comments:

References:
Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Cieutat and others, 1988.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (west of Kemuk River)

Site type: Occurrence

ARDF no.: GO007

Latitude: 59.70 **Quadrangle:** GO C-3

Longitude: 159.80

Location description and accuracy:

This occurrence is on the west side of Kemuk River, 2 miles southeast of Atshichlut Mountain. It is area 4 of Kilburn and others (1993) and also includes areas of copper-bearing mineralization noted by Hoare and Cobb (1977) along a north-trending fault west of Kemuk River (Hoare and Coonrad, 1978). The map site is at an elevation of about 1,300 feet, just east of the center of section 34, T 5 S, R 62 W, of the Seward Meridian. It is approximately located, perhaps within a mile.

Commodities:

Main: Ag, Au, Cu

Other: Hg, Mo, Pb, Zn

Ore minerals: Pyrite

Gangue minerals: Quartz

Geologic description:

The upland between Togiak Lake and Kemuk River is cored by a large, Cretaceous(?) granitic pluton with a well-developed hornfels aureole (Hoare and Coonrad, 1978). Many stream-sediment samples in this area contain anomalous amounts of copper and manganese (Cieutat and others, 1988; Hessin and others, 1978 [OF 78-9-M]). A large north-trending, high-angle fault transects the area just to the west of Kemuk River. Hoare and Cobb (1977) reported copper-bearing minerals in volcaniclastic rocks along this fault. Large debris fans on the west side of Kemuk River contain blocks of volcanic sandstone, bleached and iron-stained argillite, and highly silicified argillite that contain milky quartz veins, disseminated pyrite, and thin pyrite veinlets (Kilburn and others, 1992). Float samples of altered argillite contain up to 27 ppm Ag, 150 ppm As, 0.4 ppm Au, greater than 5,000 ppm Ba, 1.8 ppm Hg, 52 ppm Mo, 310 ppm Pb, and 570 ppm Zn (Kilburn and others, 1992, Table 1).

Alteration:

Silicification and oxidation.

Age of mineralization:

Probably Late Cretaceous. Mineralization is probably related to the granitic pluton in the area, which is part of a regionally extensive Upper Cretaceous and Lower Tertiary plutonic suite. K/Ar ages for granitic samples from the nearby pluton to the east are 63.7 2 Ma on biotite and 67.5 3 Ma on hornblende (Hoare and Coonrad, 1978).

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:

Reconnaissance stream-sediment sampling has been completed in the area.

Production notes:

Reserves:

Additional comments:

References:

Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Hessin and others, 1978 (OF 78-9-M); Cieutat and others, 1988; Kilburn and others, 1992.

Primary reference: Kilburn and others, 1992

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Upper Trail Creek

Site type: Mine

ARDF no.: GO008

Latitude: 59.98 **Quadrangle:** GO D-2

Longitude: 159.68

Location description and accuracy:
Trail Creek is a large west tributary of the Izavieknik River, which flows between Upper Togiak Lake and Togiak Lake. The map site of this placer mine is on upper Trail Creek in the SE1/4 of section 24, T 2 S, R 61 W, of the Seward Meridian. It is locality 20 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Hoare and Coonrad (1961) show this to be a placer mining locality. No additional information is available for this deposit. This part of Trail Creek is a glaciated drainage and underlain is by Jurassic and Lower Cretaceous sedimentary and volcanic rocks (Hoare and Coonrad, 1978).

Alteration:

Age of mineralization:
Holocene.

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: Inactive

Workings/exploration:
Some small surface workings are assumed to be present.

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1961; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Coonrad, 1961

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (tributary to upper Trail Creek)

Site type: Mine

ARDF no.: GO009

Latitude: 59.99 **Quadrangle:** GO D-2

Longitude: 159.62

Location description and accuracy:

Trail Creek is a large west tributary of the Izavieknik River which flows between Upper Togiak Lake and Togiak Lake. This placer mine is in an unnamed north tributary to upper Trail Creek. The map site is at an elevation of about 2,200 feet on this tributary, in the SE1/4 of section 20, T 2 S, R 60 W, of the Seward Meridian. It is locality 21 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Hoare and Coonrad (1961) show this to be a placer mining locality. No additional information is available for this deposit. This part of Trail Creek is a glaciated drainage underlain by Jurassic and Lower Cretaceous sedimentary and volcanic rocks (Hoare and Coonrad, 1978).

Alteration:

Age of mineralization:

Holocene.

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: Inactive

Workings/exploration:
Some small surface workings are assumed to be present.

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1961; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Coonrad, 1961

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (tributary to Trail Creek)

Site type: Occurrence

ARDF no.: GO010

Latitude: 59.94 **Quadrangle:** GO D-3

Longitude: 159.89

Location description and accuracy:

This occurrence is in an unnamed west tributary to Trail Creek, about 7 miles northeast of Kagati Lake and 2 miles north of the Kagati Lake prospect (GO011). The map site is at an elevation of about 1,800 feet in the SW1/4 of section 2, T 3 S, R 62 W, of the Seward Meridian. It is area 3 of Kilburn and others (1992), and is approximately located, perhaps within 1 mile.

Commodities:

Main: Au

Other: Ag, As, B, Bi, Sb, Zn

Ore minerals: Arsenopyrite, pyrite

Gangue minerals: Clay, quartz, tourmaline

Geologic description:

This occurrence is in hornfels near the contact of an Upper Cretaceous granitic stock (Hoare and Coonrad, 1978). Reconnaissance stream-sediment and pan concentrate samples from the area contain anomalous levels of several elements (Kilburn and Jones, 1992; Jones and Kilburn, 1992). Silicified hornfels contains disseminated pyrite and pyrite-, arsenopyrite-, and tourmaline-bearing quartz veins. Clay alteration and weakly disseminated pyrite characterize some iron-stained outcrops. Rock samples of altered and mineralized hornfels contain up to 0.28 ppm Ag, greater than 3,800 ppm As, 0.15 ppm Au, greater than 2,000 ppm B, 11 ppm Bi, greater than 5,000 ppm Mn, 5.4 ppm Sb, and 230 ppm Zn (Kilburn and others, 1992).

Alteration:

Silicification, clay alteration, and oxidation.

Age of mineralization:

Late Cretaceous. The mineralization is assumed to be related to the Upper Cretaceous granitic stock, which yielded a K/Ar age of 71.1 2.1 Ma on biotite (Hoare and Coonrad, 1978).

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:
Only reconnaissance surface observations and sampling have been completed in the area.

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coorad, 1978; Kilburn and Jones, 1992; Jones and Kilburn, 1992; Kilburn and others, 1992.

Primary reference: Kilburn and others, 1992

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Kagati Lake

Site type: Prospect

ARDF no.: GO011

Latitude: 59.92 **Quadrangle:** GO D-3

Longitude: 159.91

Location description and accuracy:

The Kagati Lake prospect is in uplands in the headwaters of Atmugiak Creek, 5.5 miles northeast of Kagati Lake. It is at an elevation of about 3,400 feet above the small, east-headwater lake to Atmugiak Creek. It is locality 1 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au, Hg, Sb

Other:

Ore minerals: Cinnabar, orpiment, realgar, stibnite

Gangue minerals: Calcite, quartz, tourmaline

Geologic description:

The Kagati Lake prospect is within a Cretaceous granitic pluton (Hoare and Coonrad, 1978). It was discovered and prospected by 1927 (Malone, 1962) but explored mostly in the 1950s (Sainsbury and MacKevett, 1965). North-northwest-trending fractures and shear zones up to 1,200 feet long and approximately parallel to steep joints in the host granitic rock control mineralization. Cinnabar, some closely associated with realgar, stibnite, and minor orpiment, forms veinlets and fills fractures in the shear zones. Individual cinnabar masses are 2 to 24 inches wide, but are observed only for lengths up to 10 feet due to limited exposure. Quartz, some vuggy, and clay accompany the cinnabar; secondary antimony minerals and iron-oxides are also present. Frost (1990, p. C5) describes the veins as zoned with margins of blue-green to brown tourmaline needles extending into a core of quartz and calcite; cinnabar and stibnite crystals with some realgar and orpiment are scattered through quartz in the cores of the veins. Gold values up to 2.9 ppm were obtained on vein material (Frost, 1990; Gray and others, 1990).

Alteration:

Silicification and oxidation.

Age of mineralization:

Late Cretaceous or Tertiary. The mineralization postdates the host granitic pluton, which yielded a K/Ar age of 71.1 2.1 Ma on biotite (Hoare and Coonrad, 1978).

Deposit model:
Epithermal mercury- and antimony-bearing veins in granitic rock

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Exploration includes pits, trenches, and dozer stripping; surface mapping was completed in the 1950s (Sainsbury and MaKevett, 1965).

Production notes:

Reserves:

Additional comments:

References:
Malone, 1962; Sainsbury and MacKevett, 1965; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Frost, 1990; Gray and others, 1990.

Primary reference: Sainsbury and MacKevett, 1965

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Rainy Creek

Site type: Mine

ARDF no.: GO012

Latitude: 59.99 **Quadrangle:** GO D-4

Longitude: 160.15

Location description and accuracy:

This mine is in the headwaters of Rainy Creek, an east tributary to Eek River, that flows northwest into the Bethel A-4 quadrangle. Only a small part of uppermost Rainy Creek is in the Goodnews Bay quadrangle. The map site is at an elevation of about 1,650 feet on Rainy Creek in the northeast corner of the Goodnews Bay D-4 quadrangle. This is locality 19 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other: Hg

Ore minerals: Cinnabar, gold

Gangue minerals:

Geologic description:

Mining took place on a very small part of Rainy Creek in the Goodnews Bay quadrangle. Most of the placer mining along this creek was upstream to the northeast in the Bethel quadrangle (BH002; Hoare and Cobb, 1977, p. 44). Gold was discovered on the creek in 1911 and a little mining was reported in subsequent years until WW II. Some mining continued into WW II because cinnabar, a strategic mineral, was recovered with gold, especially below Arsenic Creek, an east tributary in the Bethel quadrangle. A total of 2,000 pounds of cinnabar and 6 flasks of mercury were reported to have been produced from the creek (Malone, 1962). The amount of mining that took place in the Goodnews Bay quadrangle is minor. Bedrock in the Rainy Creek drainage is sedimentary rocks of the Cretaceous Kuskokwim Group (Hoare and Coonrad, 1978).

Alteration:

Age of mineralization:

Holocene.

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: Inactive

Workings/exploration:
Some surface workings may be present.

Production notes:

Reserves:

Additional comments:
The Rainy Creek mine is within the Togiak National Wildlife Refuge and Togiak Wilderness.

References:
Malone, 1962; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Lone Mountain

Site type: Occurrence

ARDF no.: GO013

Latitude: 59.36 **Quadrangle:** GO B-4

Longitude: 160.23

Location description and accuracy:

Lone Mountain is an upland between Gechiak Creek and another (unnamed) west tributary to the Togiak River. This occurrence is assumed to be on the east side of Lone Mountain, in the larger drainage that flows east to Togiak River. For this record, the map site is at an elevation of 1,300 feet on the north flank of Lone Mountain, in the SE1/4 of section 28, T 9 S, R 65 W, of the Seward Meridian. This occurrence is area 2 of Kilburn and others (1992). It is approximately located, perhaps within a mile.

Commodities:

Main: Cu

Other: Ag, Au, W

Ore minerals: Pyrite

Gangue minerals: Carbonate, quartz

Geologic description:

Lone Mountain is centered on a Cretaceous or Tertiary felsic stock surrounded by hornfels (Hoare and Coonrad, 1978). The iron-stained hornfels, which is locally gossan, contains disseminated pyrite and small quartz-pyrite veinlets. Quartz veinlets are also locally present in iron-stained parts of the stock near the contact zone. Stream-sediment samples from the area contain anomalous amounts of As, Bi, Cu, Pb, Mo, W, or Zn (Cieutat and others, 1988; Hessin and others, 1978 [OF 78-9-Q; OF 78-9-M]). Hornfels and veinlet samples collected near the eastern contact mostly contain anomalous amounts of copper (up to 900 ppm Cu) and up to 1.2 ppm Ag, 0.01 ppm Au, 26 ppm Bi, 7.2 ppm Mo, 30 ppm Sn, and 50 ppm W (Kilburn and others, 1992). One iron-stained, carbonate-cemented breccia contained 460 ppm As, 0.15 ppm Au, 1.9 ppm Hg, and 11 ppm Sb.

Alteration:

Silicification and oxidation.

Age of mineralization:

Probably Late Cretaceous or Early Tertiary. Mineralization is probably related to the

granitic pluton in the area, which is part of a regionally extensive Upper Cretaceous and Lower Tertiary plutonic suite (Hoare and Coonrad, 1978).

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:
Reconnaissance geochemical sampling has been completed in the area (Cieutat and others, 1988; Hessin and others, 1978 [OF 78-9-Q; OF 78-9-M]).

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1978; Hessin and others, 1978 (OF 78-9-Q); Hessin and others, 1978 (OF 78-9-M); Cieutat and others, 1988; Kilburn and others, 1992.

Primary reference: Kilburn and others, 1992

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (west bank of Togiak River)

Site type: Occurrence

ARDF no.: GO014

Latitude: 59.30 **Quadrangle:** GO B-4

Longitude: 160.17

Location description and accuracy:

This occurrence is close to the west bank of Togiak River. It is less than a mile downstream of the Kassianmute village site and about 3 miles upstream of the mouth of Pungokepuk Creek, an east tributary to Togiak River. The map site is in the NE1/4 of section 23, T 10 S, R 65 W, of the Seward Meridian. It is locality 2 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Cu, Zn

Other: Ag, Au, Hg, Mo

Ore minerals: Chalcopyrite, pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

At this occurrence, Jurassic or Cretaceous pillow basalt is cut by a 12- to 15-inch-wide, at least 25-foot-long, quartz vein containing coarsely crystalline sphalerite, minor chalcopyrite, and pyrite (Hoare and Coonrad, 1961). A sample of oxidized sphalerite-rich vein material and its altered volcanic hostrock contained 3 ppm Ag, 110 ppm As, 0.35 ppm Au, 390 ppm Cd, 510 ppm Cu, 10.4 ppm Hg, greater than 5,000 ppm Mn, 6.8 ppm Mo, and greater than 1,400 ppm Zn (Kilburn and others, 1992). The occurrence is in lowlands along the Togiak River. Bedrock exposures are minimal, but parts of a gabbro intrusive are exposed across the river from this locality.

Alteration:

Age of mineralization:

Post Early Cretaceous. The host pillow basalt is part of a Jurassic to Lower Cretaceous sedimentary and volcanic assemblage (Hoare and Coonrad, 1978).

Deposit model:

Polymetallic vein (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:
This occurrence has been reconnaissance mapped and sampled (Kilburn and others, 1992).

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1961; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Kilburn and others, 1992.

Primary reference: Hoare and Coonrad, 1961

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Canyon Creek

Site type: Prospect

ARDF no.: GO015

Latitude: 59.420 **Quadrangle:** GO B-6

Longitude: 161.112

Location description and accuracy:
This prospect is on Canyon Creek, a west tributary to Goodnews River. It is 1/2 mile downstream of the mouth of Bear Creek, a south tributary to Canyon Creek. It is probably located to within 1/4 mile. It is locality 18 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A placer gold prospect is present along Canyon Creek about 1/2 mile downstream from the mouth of Bear Creek, which contains productive gold placers (GO016, GO017; Hoare and Coonrad, 1961). Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks, locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ultramafic plutonic rocks (Hoare and Coonrad, 1978).

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: None

Site Status: Probably inactive

Workings/exploration:
Some pits have probably been dug on this prospect.

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1961; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Coonrad, 1961

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Bear Creek (lower)

Site type: Mine

ARDF no.: GO016

Latitude: 59.41 **Quadrangle:** GO B-6

Longitude: 161.13

Location description and accuracy:

Bear Creek is a south tributary of Canyon Creek. Its confluence with Canyon Creek is 3/4 mile downstream of the outlet of Canyon Lake. This placer mine, 3/4 mile upstream of the confluence of Bear and Canyon Creeks, is the lower of two mines located on Bear Creek. It is locality 16 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other: Pt

Ore minerals: Gold, PGE

Gangue minerals:

Geologic description:

Placer gold was discovered on Bear Creek as early as 1916 and mining was reported intermittently up to 1934 (Hoare and Coonrad, 1978). This site is the lower of two placer mine locations on Bear Creek shown by Cobb and Condon (1972). Harrington (1921) visited Bear Creek in 1919 and reported that initial mining had opened up a 15- by 50-foot pit, in which 2 to 3 feet of black, clayey muck overlay 2 to 5 feet of gravel. The gravel was post-glacial, and consisted mostly of locally derived, iron-stained and cemented sedimentary material; plutonic rock fragments were not present. Only a few very small colors were obtained in pans taken from the base of the gravels (not necessarily on bedrock). Fechner (1988) collected 4 samples of sediments in the Bear Creek drainage; these samples contained a trace to 0.624 ounce of gold per ton. A sample of felsic intrusive rock, apparently float (Fechner, 1988, sample 44), contained 725 ppb gold. Minor platinum was recovered with the gold from Bear Creek and some prospecting for platinum was completed here by the Goodnews Bay Mining Company (Mertie, 1969, p. 89). An analysis of PGE material recovered from Bear Creek showed it to contain 72.82 percent platinum, 15.58 percent iridium, 8.17 percent osmium, 2.29 prcent ruthenium, 0.78 percent rhodium, and 0.36 percent palladium (Mertie, 1969, Table 38). Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ultramafic plutonic

rocks (Hoare and Coonrad, 1978).

Alteration:
Local iron-staining and cementation of gravels.

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 placer mine workings are probably present at this locality.

Production notes:

Reserves:

Additional comments:

References:
Harrington, 1921; Mertie, 1969; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Bear Creek (upper)

Site type: Mine

ARDF no.: GO017

Latitude: 59.40 **Quadrangle:** GO B-6

Longitude: 161.14

Location description and accuracy:

Bear Creek is a south tributary of Canyon Creek. Its confluence with Canyon Creek is 3/4 mile downstream of the outlet of Canyon Lake. This placer mine is the upper of two located on Bear Creek. It is 1 3/4 miles upstream of the confluence of Bear Creek with Canyon Creek. The map site is at the junction of Bear Creek and an unnamed west tributary, in the SW1/4 of section 18, T 9 S, R 70 W, of the Seward Meridian. It is locality 17 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other: Pt

Ore minerals: Gold, PGE

Gangue minerals:

Geologic description:

Placer gold was discovered on Bear Creek as early as 1916 and mining was reported intermittently up to 1934 (Hoare and Coonrad, 1978). This site is the upper of two placer mine locations on Bear Creek shown by Cobb and Condon (1972). Harrington (1921) visited Bear Creek in 1919 and reported that initial mining had opened up a 15- by 50-foot pit, in which 2 to 3 feet of black clayey muck overlay 2 to 5 feet of gravel. The gravel was post-glacial, locally iron-stained and cemented, and mostly sedimentary material, all locally derived. Only a few very small colors were obtained in pans taken from the base of the gravels (not necessarily on bedrock). Fechner (1988) described about 1 mile of workings along this part of Bear Creek and estimated that a total of 12,000 cubic yards of material had been mined. Pay from various mine pits is reported to have run 0.002 to 0.011 ounce of gold per square foot (Reed, 1931). Fechner (1988) collected 4 samples of Bear Creek sediments; pan concentrate from these samples contained a trace to 0.624 ounce of gold per ton. A float sample of limonite-stained intrusive rock containing pyrite and arsenopyrite assayed 725 ppb gold (Fechner, 1988, sample 44). One of the sediment samples, from the main west tributary to Bear Creek (locally called Danielson Creek), yielded heavy-mineral concentrate containing more than 10 ppm platinum and

anomalous As and Cu values. Minor platinum was recovered with the gold from Bear Creek and some prospecting for platinum was completed here by the Goodnews Bay Mining Company (Mertie, 1969, p. 89). An analysis of PGE material recovered from Bear Creek showed it to contain 72.82 percent platinum, 15.58 percent iridium, 8.17 percent osmium, 2.29 prcent ruthenium, 0.78 percent rhodium, and 0.36 percent palladium (Mertie, 1969, Table 38). Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ultramafic plutonic rocks (Hoare and Coonrad, 1978).

Alteration:
Iron-staining and cementation.

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:
Fechner (1988) described about 1 mile of open-cut workings along this part of Bear Creek and estimated that a total of 12,000 cubic yards of material had been mined.

Production notes:
Fechner (1988) estimated that a total of 12,000 cubic yards of material had been mined. Pay from various mine pits is reported to have run 0.002 to 0.011 ounce of gold per square foot (Reed, 1931). Production could therefore have ranged from 24 to 132 ounces of gold.

Reserves:

Additional comments:

References:
Harrington, 1921; Reed, 1931; Mertie, 1969; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Fox Creek

Site type: Mine

ARDF no.: GO018

Latitude: 59.37 **Quadrangle:** GO B-6

Longitude: 161.12

Location description and accuracy:

This Fox Creek, with headwaters in the uplands of Atlakumtsitak Mountain, is an east tributary to Slate Creek (GO020). The placer mine location is about 2 miles upstream of the confluence of Fox and Slate Creeks, at the mouth of a small unnamed west tributary (Fechner, 1988, fig. 5). It is locality 15 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

A small amount of placer gold mining has taken place on Fox Creek; minor production was reported in 1936 (Smith, 1938). This east tributary to Slate Creek (GO020) is called 'Fox Gulch' by Hoare and Cobb (1977). The location of workings was plotted by Fechner (1988, fig. 5), who estimated that about 20,000 yards of material had been mined. The deposit was on a low bench along the east side of the stream, where 6 to 7 feet of gravel covered a small, 100- by 200-foot area of pay on bedrock. The average grade was reported to be 0.08 ounce of gold per cubic yard (Roehm, 1937). The gold was coarse, smooth and bright. Fechner (1988) collected 5 samples of sediment along about 3 miles of Fox Creek; these samples contained a trace to 0.0003 ounce of gold per cubic yard. Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks, locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ ultramafic plutonic rocks (Hoare and Coonrad, 1978).

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:
The location of workings was plotted by Fechner (1988, fig. 5), who estimated that about 20,000 yards of material had been mined. The deposit was on a low bench along the east side of the stream, where 6 to 7 feet of gravel covered a small,100- by 200-foot area of pay on bedrock. The average grade was reported to be 0.08 ounce of gold per cubic yard (Roehm, 1937).

Production notes:
Fechner (1988, Figure 5) estimated that about 20,000 yards of material had been mined. As the average grade was reported to be 0.08 ounce of gold per cubic yard (Roehm, 1937), production could have been 1,600 ounces of gold. This is considered a maximum estimate of production.

Reserves:

Additional comments:

References:
Roehm, 1937; Smith, 1938; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Olympic Creek

Site type: Mine

ARDF no.: GO019

Latitude: 59.34 **Quadrangle:** GO B-6

Longitude: 161.22

Location description and accuracy:

Olympic Creek is a north tributary to Slate Creek, a north tributary to Goodnews River. This location is about 1 mile upstream of the confluence of Olympic and Slate Creeks and is the midpoint of placer workings mapped by Fechner (1988, fig. 5). It is locality 14 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other: Pt

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer gold mining was reported on Olympic Creek from 1926 to 1931 (Hoare and Cobb, 1977). Fechner (1988, fig. 5) showed the location of a 0.4-mile-long mining cut along the west side of the creek that appears to be in a bench setting. The mined area includes about 10,000 square feet in an upper pit and about 4,000 square feet in a lower pit; the total mined volume is estimated to have been 100,000 cubic yards (Fechner, 1988). As the average grade of the mined material was reported to be 0.04 ounce of gold per cubic yard (Reed, 1931), total production could have been about 4,000 ounces of gold, much more than the 169 ounces that Fechner (1988, p. 50) identified as reported production. The coarse, angular gravel contains granitic cobbles up to 2 feet across; it is 6 feet thick in the creek and about 20 feet thick on the bench. Fechner (1988) collected six, 0.1 cubic yard sediment samples along 3 miles of the Olympic Creek dainage. These samples contained a trace to 0.0045 ounce of gold per cubic yard; one of these samples from along the lower part of the creek, contained 600 ppb platinum. Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ultramafic plutonic rocks (Hoare and Coonrad, 1978).

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:
Fechner (1988, fig. 5) showed the location of a 0.4-mile-long mining cut along the west side of the creek that appears to be in a bench setting. The mined area includes about 10,000 square feet in an upper pit and about 4,000 square feet in a lower pit; the total mined volume is estimated to have been 100,000 cubic yards (Fechner, 1988).

Production notes:
The total mined volume is estimated to have been 100,000 cubic yards (Fechner, 1988). As the average grade of the mined material was reported to be 0.04 ounce of gold per cubic yard (Reed, 1931), total production could have been about 4,000 ounces of gold. This is considered a maximum estimate. It is much more than the 169 ounces that Fechner (1988, p. 50) identified as reported production.

Reserves:

Additional comments:

References:
Reed, 1931; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Slate Creek

Site type: Mine

ARDF no.: GO020

Latitude: 59.31 **Quadrangle:** GO B-6

Longitude: 161.23

Location description and accuracy:

Slate Creek is a north tributary to Goodnews River. This location is on Slate Creek just below the mouth of Wattamuse Creek (GO021) and just east of the local airstrip. The location of at least some placer mining on Slate Creek is assumed to be close to and downstream of that on Wattamuse Creek. This mine is included in locality 13 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

The principal placer gold producer in the area, Wattamuse Creek (GO021) flows into Slate Creek, a north tributary to Goodnews River. Parts of Slate Creek near Wattamuse Creek have been extensively drilled and explored and apparently placer mined (Hoare and Cobb, 1977). Some of the placer ground near Wattamuse and Slate Creeks includes bench deposits (Smith, 1934, p. 46-47). Between Wattamuse and Fox Creeks, the Slate Creek drainage has about 7 to 8 feet of gravel and has been prospected with encouraging results (Reed, 1931), although mining has apparently not taken place. Fechner (1988) noted that some small-scale mining has taken place on Slate Creek above Fox Creek (GO042). He collected 7 sediment samples along about 6 miles of the drainage above the mouth of Wattamuse Creek. The gold content of these samples ranged from undetectible to 0.0014 ounce per cubic yard. Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ultramafic plutonic rocks (Hoare and Coonrad, 1978).

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:
Exploration, including drilling, has taken place on Slate Creek near Wattamuse Creek.

Production notes:

Reserves:

Additional comments:

References:
Smith, 1934; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Wattamuse Creek

Site type: Mine

ARDF no.: GO021

Latitude: 59.33 **Quadrangle:** GO B-6

Longitude: 161.24

Location description and accuracy:

Wattamuse Creek is a west tributary to Slate Creek (GO020), a north tributary to Goodnews River. It has been placer mined from its mouth upstream for a distance of about 2 miles, including a 1/2 mile extension upstream in the Goodnews Bay B-7 quadrangle. The map site is at the approximate midpoint of the workings, in the NE1/4 of section 9, T 10 S, R 71 W, of the Seward Meridian. It is included in locality 13 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Wattmuse Creek is the principal gold producer in the Goodnews River drainage. Gold was discovered in 1917 by a native reindeer herder (Harrington, 1921), and mining took place from the fall of 1917, when about 500 ounces were produced, to the beginning of WW II (Hoare and Cobb, 1977). Mining has been extensive over the lower 2 miles of the drainage and included dredging, especially below the mouth of Cascade Creek (GO022), a north tributary. A dragline operated in upper parts of the creek in 1946 and 1947 (Fechner, 1988). Fechner (1988) considered the lower part of Wattamuse Creek to be a continuation of Cascade Creek; the lower part of the creek is not named on USGS topographic maps. However, early descriptions indicate that Wattamuse Creek continues to Slate Creek and that Cascade Creek is a tributary to Wattamuse Creek. The pay streak on Wattamuse Creek was 20 to 30 feet wide in upper parts of the creek to over 100 feet wide on lower parts. The pay,1 to 2 feet of gravel and about 6 inches of bedrock, ranged in grade from 0.015 to 0.15 ounce of gold per cubic yard. The overburden was 2 to 5 feet of soil and gravel (Harrington, 1921). The gravel became coarser upstream, where boulders up to a few feet across became more abundant. Fechner (1988) collected eight 0.1 cubic yard placer samples in the Wattamuse Creek drainage, including one from lower Watta-

muse below the mouth of Cascade Creek. These samples, from along the active drainage and from benches, contained 0.0013 to 0.7583 ounce of gold per cubic yard. Fechner (1988) indicates that the tailings along the creek could be reworked and that local unmined areas are also present. One unmined area is estimated to contain 60,000 cubic yards with an average grade of 0.015 to 0.018 ounce of gold per cubic yard. The lower dredged part of the creek (included with Cascade Creek by Fechner, 1988) is estimated to have had about 800,000 cubic yards of tailings. As the dredge is reported to have recovered about 0.025 ounce of gold per cubic yard (Fechner, 1988), about 20,000 ounces of gold production are indicated for this part of the creek. However, recorded production for this creek segment is 9,300 ounces of gold (Fechner, 1988). The upper part of the creek has recorded and estimated production of 18,300 ounces of gold (Fechner, 1988), making total production from the creek possibly as much as 38,000 ounces. Wattamuse Creek is a glaciated drainage. Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks intruded by an Upper Cretaceous granitic stock in the headwaters of the creek (Hoare and Coonrad, 1978).

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; medium

Site Status: Probably inactive

Workings/exploration:
Mining has been extensive over the lower 2 miles of the drainage and included dredging, especially below the mouth of Cascade Creek (GO022), a north tributary. A dragline operated in upper parts of the creek in 1946 and 1947 (Fechner, 1988).

Production notes:
About 2,000 ounces of gold were produced from 1917 to 1919 (Harrington, 1921). Fechner (1988) indicates that the tailings along the creek could be reworked and that local unmined areas are also present. One unmined area is estimated to contain 60,000 cubic yards with an average grade of 0.015 to 0.018 ounce of gold per cubic yard. The lower dredged part of the creek (included with Cascade Creek by Fechner, 1988) is estimated to have had about 800,000 cubic yards of tailings. As the dredge is reported to have recovered about 0.025 ounce of gold per cubic yard (Fechner, 1988), about 20,000 ounces of gold production are indicated for this part of the creek. However, recorded production for this creek segment is 9,300 ounces of gold (Fechner, 1988). The upper part of the creek

has recorded and estimated production of 18,300 ounces of gold (Fechner, 1988) making total production from the creek possibly as much as 38,000 ounces.

Reserves:

Additional comments:

References:

Harrington, 1921; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Cascade Creek

Site type: Prospect

ARDF no.: GO022

Latitude: 59.33 **Quadrangle:** GO B-6

Longitude: 161.24

Location description and accuracy:

Cascade Creek is a north tributary to Wattamuse Creek (GO021), a west tributary to Slate Creek (GO020). The mouth of Cascade Creek is about 1 mile upstream of the confluence of Wattamuse and Slate Creeks and just upstream of the old mining camp on Wattamuse Creek. It is included in Hoare and Cobb (1977) under the name 'Cascade Ck.'. Fechner (1988) included the lower part of Wattamuse Creek as a part of Cascade Creek, but early descriptions indicate that Wattamuse Creek is the stream that continues to Slate Creek and that Cascade Creek is a tributary to Wattamuse Creek.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Cascade Creek has been explored, including drilling, but mining has apparently not taken place. Gravels are about 6 feet deep. Six, 0.1 cubic yard placer samples from along about 4 miles of the drainage contained a trace to 0.0017 ounce of gold per cubic yard (Fechner, 1988). Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks, locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ultramafic plutonic rocks (Hoare and Coonrad, 1978).

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: None

Site Status: Inactive

Workings/exploration:
Exploration including drilling has taken place, especially along lower Cascade Creek near its confluence with Wattamuse Creek (GO021).

Production notes:

Reserves:

Additional comments:

References:
Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Wattamuse Creek (lode)

Site type: Prospect

ARDF no.: GO023

Latitude: 59.345 **Quadrangle:** GO B-7

Longitude: 161.332

Location description and accuracy:

This lode prospect is on the ridge crest that makes up the divide between the headwaters of Wattamuse Creek (GO021), Granite Creek, and South Fork Arolik River. It is on the saddle about 1,000 feet east of a local, 1,813-foot summit, and 0.6 mile due north of Granite Creek. It is accurately located.

Commodities:

Main: Au

Other: Ag, Hg, Sb, W

Ore minerals: Arsenopyrite, chalcopyrite, gold, pyrite, pyrrhotite, stibnite

Gangue minerals: Quartz

Geologic description:

An Upper Cretaceous granitic stock underlies the head of Granite and Wattamuse Creeks (Hoare and Coonrad, 1978). This granodiorite to diorite stock hosts 1 inch- to 1-foot-thick quartz veins containing arsenopyrite, stibnite, pyrite, and some chalcopyrite. A soil-geochemical grid over about a 1/4- by 1/2-mile area straddling the ridge crest showed large areas of soil containing more than 100 ppb gold, and several areas containing more than 1,000 ppb gold (Calista Corporation, unpublished data). Individual grab samples collected for Calista Corporation contain up to 9.5 ppm Au, 14.9 ppm Ag, 17 percent As, 22 percent Sb, and 1,500 ppm Hg (Fechner, 1988, p. 58). The U. S. Bureau of Mines collected 19 grab samples of rocks in the headwaters of Wattamuse Creek. One of these, a composite grab sample collected in this prospect area, assayed 2.18 ounces of gold per ton, 6.6 ppm Ag, 2,850 ppm As, 400 ppm Bi, 40 ppm Sb, and 184 ppm W (Fechner, 1988, p. 58). Grab samples of quartz veins contained 1.25 to 5.3 ppm Au. The country rocks to the granitic stock locally include mafic rocks; a sample of mafic rock containing arsenopyrite, pyrrhotite, and chalcopyrite assayed 17.4 ppm Ag, 3.3 ppm Au, 0.13 percent As, 30 ppm Bi, and 0.19 percent Cu (Fechner, 1988, p. 58).

Alteration:

Silicification.

Age of mineralization:
Late Cretaceous or younger. A K/Ar age for the host granitic stock is 71.3 2.1 Ma on biotite (Hoare and Coonrad, 1978).

Deposit model:
Granitic rock-hosted epithermal gold/silver

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

Production Status: None

Site Status: Active?

Workings/exploration:
A soil geochemistry grid, selected rock sampling, and probably surface mapping has been completed on the prospect (Calista Corporation, unpublished data).

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Ikuk

Site type: Prospect

ARDF no.: GO024

Latitude: 59.27 **Quadrangle:** GO B-7

Longitude: 161.49

Location description and accuracy:

This prospect is on the divide between the headwaters of an unnamed north tributary to the Tunulik River and the Barnum Creek drainage. The prospect is in a saddle at an elevation of about 1,500 feet and about 1 mile west of a 2,298-foot summit of Ikuktlitlig Mountain It is locality 3 of Kilburn and others (1993).

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Arsenopyrite, chalcopyrite, pyrite, pyrrhotite

Gangue minerals: Biotite, chlorite, quartz

Geologic description:

A composite mafic to felsic pluton intrudes Paleozoic to Mesozoic sedimentary and volcanic rocks in this area (Hoare and Coonrad, 1978). Surface observations completed for Calista Corporation (unpublished data), identified peridotite, diorite, granodiorite, and quartz monzonite in the intrusive complex. A variably silicified, choritized, and biotite-altered, 800-foot-wide fractured zone in diorite contains chalcopyrite, arsenopyrite, pyrrhotite, and pyrite (Fechner, 1988, 61). Rock samples from the prospect contain up to 2.4 percent Cu, 25.2 ppm Ag, 0.16 ounce of gold per ton, and 0.99 percent As.

Alteration:

Silicification, chloritization, and biotite replacement (?).

Age of mineralization:

Not known. The age of the host intrusive rock is probably Jurassic or Late Cretaceous/ Early Tertiary, the age of other intrusive rocks in the region (Hoare and Coonrad, 1978).

Deposit model:

Sulfide-bearing shear zone in diorite

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

Production Status: None

Site Status: Undetermined

Workings/exploration:

Reconnaissance surface observations and sampling have been completed in the prospect area.

Production notes:

Reserves:

Additional comments:

References:

Hoare and Coonrad, 1978; Fechner, 1988; Kilburn and others, 1993.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (east of upper Tunulik River)

Site type: Prospect

ARDF no.: GO025

Latitude: 59.253 **Quadrangle:** GO B-7

Longitude: 161.499

Location description and accuracy:

This prospect is at an elevation of about 1,450 feet on the southwest flank of a ridge, about 0.6 mile east of upper Tunalik River. The map site is in the west 1/2 of section 1, T 11 S, R 73 W, of the Seward Meridian. The location is probably accurate within 1/4 mile. This is locality 4 of Kilburn and others (1993).

Commodities:

Main: Au, Cu

Other:

Ore minerals: Chalcopyrite, gold

Gangue minerals: Orthoclase, quartz

Geologic description:

A composite mafic to felsic pluton intrudes Paleozoic to Mesozoic sedimentary and volcanic rocks in this area (Hoare and Coonrad, 1978). Surface observations completed for Calista Corporation (unpublished data) identified diorite or gabbro with podlike segregations (?) containing 1 to 2 percent chalcopyrite (Fechner, 1988, p. 63). A local quartz-orthoclase vein, 2 inches wide, assayed 3 ppm Au and 3,000 ppm As. The stream sediment from a small creek flowing southwest to the Tunulik River from the prospect contained 4.1 ppm Au; pan concentrate from this location contained gold flakes.

Alteration:

Age of mineralization:

Not known. The age of the host intrusive rock is probably Jurassic or Late Cretaceous/ Early Tertiary, the age of other intrusive rocks in the region (Hoare and Coonrad, 1978).

Deposit model:

Vein and segregations(?) in mafic rocks

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

Production Status: None

Site Status: Undetermined

Workings/exploration:

Reconnaissance surface observations and sampling have been completed in the prospect area (Calista Corporation, unpublished data).

Production notes:

Reserves:

Additional comments:

References:

Hoare and Coonrad, 1978; Fechner, 1988; Kilburn and others, 1993.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Goodnews Bay (north shore)

Site type: Occurrence

ARDF no.: GO026

Latitude: 59.12 **Quadrangle:** GO A-8

Longitude: 161.82

Location description and accuracy:
This occurrence is on the north shore of Goodnews Bay, 7 miles due north of Platinum and 2.5 miles west-northwest of Beluga Hill. It is locality 12 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
Berryhill (1963) collected samples of modern beach deposits at six locations along the northwest shore of Goodnews Bay. The pan concentrate of the beach sediment at this location contained a trace of chromite (Berryhill, 1963, p. 15).

Alteration:

Age of mineralization:
Holocene.

Deposit model:
Placer beach deposits

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Reconnaissance sampling of beach sands was completed in 1958 or 1959 (Berryhill, 1963).

Production notes:

Reserves:

Additional comments:

References:

Berryhill, 1963; Cobb and Condon, 1972; Hoare and Cobb, 1977.

Primary reference: Berryhill, 1963

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): North Spit (Goodnews Bay)

Site type: Occurrence

ARDF no.: GO027

Latitude: 59.07 **Quadrangle:** GO A-8

Longitude: 161.87

Location description and accuracy:
This occurrence is about 3 miles of the modern beach along Kuskokwim Bay from the south tip of North Spit (Goodnews Bay) north to USGS benchmark Promontory. It is locality 10 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au, Cr

Other:

Ore minerals: Chromite, gold, magnetite

Gangue minerals:

Geologic description:
Berryhill (1963) collected five samples of the modern beach along the Bering Sea side of North Spit (Goodnews Bay). Chromite was present in pan concentrates from all of the samples and it was a major constituent in three of them; magnetite was present in about equal amounts to chromite. The iron content of the samples ranged from 1.3 to 6.1 pounds per cubic yard. There was a trace of gold in the three samples that had higher chromite concentrations.

Alteration:

Age of mineralization:
Holocene.

Deposit model:
Placer Au-PGE; beach (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:
Reconnaissance sampling of beach sands was completed in 1958 or 1959 (Berryhill, 1963).

Production notes:

Reserves:

Additional comments:

References:
Berryhill, 1963; Cobb and Condon, 1972; Hoare and Cobb, 1977.

Primary reference: Berryhill, 1963

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): South Spit (Goodnews Bay)

Site type: Occurrence

ARDF no.: GO028

Latitude: 59.03 **Quadrangle:** GO A-8

Longitude: 161.84

Location description and accuracy:

This occurrence is about 4 miles of the modern beach along Kuskokwim Bay from near the north end of South Spit (Goodnews Bay) south for 1 mile past the village of Platinum. The south limit of this occurrence is the Goodnews A-8 quadrangle boundary; elements of this occurrence continue south to the Hagemeister Island quadrangle. This is locality 11 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au, Cr

Other:

Ore minerals: Chromite, gold, magnetite

Gangue minerals:

Geologic description:

Berryhill (1963) collected three samples of the modern beach along the Bering Sea side of South Spit (Goodnews Bay). Chromite was present in pan concentrates from all of the samples and it was a major constituent in two of them; magnetite was present in about equal amounts to chromite. The iron content ranged from 1.6 to 3.6 pounds per cubic yard, and there was a trace of gold in all three samples. This occurrence is continuous with chromite- and gold-bearing beaches to the south in the Hagemeister Island D-6 quadrangle (HG001). Hessin and others (1978, [OF 78-9-J; OF 78-9-K; OF 78-9-L; OF 78-9-P]) and Coonrad and others (1978) showed that samples of bottom sediments collected offshore of the present beach contained anomalous concentrations of Cr, Co, Ni, Hg, Au, and Pt in several places.

Alteration:

Age of mineralization:

Holocene.

Deposit model:

Placer Au-PGE; beach (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:
Reconnaissance sampling of beach sands was completed in 1958 or 1959 (Berryhill, 1963).

Production notes:

Reserves:

Additional comments:

References:
Berryhill, 1963; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hessin and others, 1978 (OF 78-9-J); Hessin and others, 1978 (OF 78-9-K); Hessin and others, 1978 (OF 78-9-L); Hessin and others, 1978 (OF 78-9-P); Coonrad and others, 1978.

Primary reference: Berryhill, 1963

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Jacksmith Creek

Site type: Prospect

ARDF no.: GO029

Latitude: 59.39 **Quadrangle:** GO

Longitude: 161.58

Location description and accuracy:

This prospect is on an unnamed south tributary to Jacksmith Creek. For this record, the map site is at a cabin where a winter trail crosses the tributary, in the south 1/2 of section 16, T 9 S, R 73 W, of the Seward Meridian. It is locality 3 of Hoare and Cobb (1977) and of Cobb and Condon (1972). The accuracy of the location is unknown.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

W.L. Coonrad (U.S.G.S.) reported on 11/10/53 to E. H. Cobb (U.S.G.S.) that there had been past placer activity at this location. Other information about this locality is not available. In this area, Jurassic mafic plutons intrude Paleozoic and Mesozoic sedimentary and volcanic rocks (Hoare and Coonrad, 1978).

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: Undetermined

Site Status: Inactive

Workings/exploration:
Some small surface workings may be present at this locality.

Production notes:

Reserves:

Additional comments:

References:
Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Domingo Creek

Site type: Mine

ARDF no.: GO030

Latitude: 59.45 **Quadrangle:** GO B-7

Longitude: 161.52

Location description and accuracy:
Domingo Creek is a small west tributary to Faro Creek, a south tributary to Arolik River. This location is on the lower part of Domingo Creek about 1/2 mile west of a winter trail. It is locality 4 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A placer mine location was noted here by Hoare and Coonrad (1961), but other information about the deposit is not available. Domingo Creek is in the non-glaciated part of the Faro Creek drainage. Nearby uplands include Paleozoic and Mesozoic sedimentary and volcanic rocks intruded by Jurassic mafic and ultramafic plutons (Hoare and Coonrad, 1978).

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: Inactive

Workings/exploration:
Some small-scale surface workings were probably present here.

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1961; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Coonrad, 1961

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Kowkow Creek

Site type: Mine

ARDF no.: GO031

Latitude: 59.47 **Quadrangle:** GO

Longitude: 161.44

Location description and accuracy:

Kowkow Creek is a south tibutary to Trail Creek, which flows west to Butte Creek in the Faro Creek drainage. The headwaters of Kowkow Creek are on the northwest flank of Island Mountain. This is locality 5 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other: Ni, Pt

Ore minerals: Gold, magnetite, PGE

Gangue minerals:

Geologic description:

Kowkow Creek is in the non-glaciated part of the Faro Creek drainage. Placer gold mining started there in 1913 and continued through most years to 1940 (Harrington, 1921; Hoare and Cobb, 1977). The pay is 8 to 15 inches of compacted fine gravel on a clay (with some gravel) false bedrock that is overlain by 3 to 4 feet of dark gravel and 1 to 3 feet of muck (Harrington, 1921, p. 227). The depth to bedrock is not known. Kowkow Creek is one of the principal producers in the Arolik River basin. It was estimated to have contributed a large part of the 1,500 ounces of gold recovered from operations in this basin up to 1919 (Harrington, 1921). Some platinum was recovered along with the gold (Hoare and Cobb, 1977). Nearby uplands are underlain by Paleozoic and Mesozoic sedimentary and volcanic rocks intruded by Jurassic mafic and ultramafic plutons (Hoare and Coonrad, 1978). Stream sediments from drainages in these uplands commonly contain anomalous amounts of nickel (Hessin and others, 1978 (OF 78-9-L).

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: Undetermined

Workings/exploration:
Open-cut placer mine workings are present along a significant part of Kowkow Creek.

Production notes:
Kowkow Creek was mined intermittently from 1913 to 1940. A large part of the 1,500 ounces of gold estimated to have been produced from operations in the Arolik River basin by 1919 came from this creek (Harrington, 1921, p. 221). Total production to date (2001) probably is subtantially more than this amount.

Reserves:

Additional comments:

References:
Harrington, 1921; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Hessin and others, 1978 (OF 78-9-L).

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Fox Creek

Site type: Mine

ARDF no.: GO032

Latitude: 59.51 **Quadrangle:** GO C-7

Longitude: 161.43

Location description and accuracy:
This Fox Creek is a south tributary to Arolik River. The mouth of Fox Creek is about 1/2 mile downstream from the mouth of Snow Gulch (GO034). This placer site is in upper Fox Creek about 2 miles upstream of its mouth. It is locality 7 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
W.L. Coonrad (U.S.G.S.) reported on 11/10/53 to E. H. Cobb (U.S.G.S.), that there had been past placer activity at this location. Other information about this locality is not available. It is in a non-glaciated part of the Arolik River basin. Fox Creek drains across the faulted contact between Precambrian crystalline rocks and Paleozoic and Mesozoic sedimentary and volcanic rocks (Hoare and Coonrad, 1978).

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: Undetermined

Site Status: Probably inactive

Workings/exploration:
Some small surface workings are probably present at this locality.

Production notes:

Reserves:

Additional comments:

References:
Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Butte Creek

Site type: Mine

ARDF no.: GO033

Latitude: 59.49 **Quadrangle:** GO

Longitude: 161.47

Location description and accuracy:

Butte Creek is a small east tributary to Faro Creek, a south tributary of Arolik River. Almost a mile of upper Butte Creekhas been placer mined. The map site is at the approximate midpoint of the placer workings, at the southeast corner of section 11, T 8 S, R 27 W, of the Seward Meridian. This is locality 6 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other: Pt

Ore minerals: Gold, PGE

Gangue minerals:

Geologic description:

Butte Creek is in the non-glaciated part of the Faro Creek drainage. Placer gold mining has taken place over about one mile of upper Butte Creek, starting in 1911 and continuing in most years up to 1940 (Hoare and Cobb, 1977, p. 29). About five feet of gravel covered a pay streak on a false clay bedrock like that on Kowkow Creek (GO031). The depth to true bedrock is 15 to 25 feet below the false bedrock. About 3,400 ounces of gold were produced up to 1919 (Harrington, 1921). Some platinum was also recovered with the gold. Platinum recovered from Butte Creek contained 59.07 percent Pt, 15.38 percent Ir, 14.82 percent Os, 9.31 percent Ru, 0.96 percent Rh, and 0.46 percent Pd (Mertie, 1969, table 38). Butte Creek was prospected for platinum in the 1960s by the Goodnews Bay Mining Company (Mertie, 1969, p. 89). Butte Creek is near the faulted contact between Precambrian crystalline rocks and Paleozoic and Mesozoic sedimentary and volcanic rocks (Hoare and Coonrad, 1978).

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:
Open-cut surface mine workings are present along about 1 mile of upper Butte Creek. The creek was prospected for platinum in the 1960s by the Goodnews Bay Mining Company (Mertie, 1969, p. 89).

Production notes:
Placer gold mining has taken place over about one mile of the creek starting in 1911 and continuing in most years up to 1940 (Hoare and Cobb, 1977. p. 29). About 3,400 ounces of gold were produced up to 1919 (Harrington, 1921). The small amount of platinum production from Butte Creek was included in the amount reported by the Goodnews Bay Mining Company for its Salmon River operations in the Hagemeister Island quadrangle (Mertie, 1969).

Reserves:

Additional comments:

References:
Harrington, 1921; Mertie, 1969; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Snow Gulch

Site type: Mine

ARDF no.: GO034

Latitude: 59.55 **Quadrangle:** GO C-7

Longitude: 161.42

Location description and accuracy:

Snow Gulch is a small north tributary to Arolik River (GO036). The mouth of Snow Gulch is 2 miles upstream of the mouth of Faro Creek. Placer mining has taken place along the lower mile of Snow Gulch. The map site is at the approximate midpoint of the placer workings, in the N1/2 of section 30, T 7 S, R 71 W, of the Seward Meridian. It is locality 8 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other: Pt

Ore minerals: Gold, PGE

Gangue minerals:

Geologic description:

Placer gold mining occurred on Snow Gulch in 1913 or earlier and in 1938 to 1940 (Harrington, 1921; Hoare and Cobb, 1977); it may also have occurred at other times between 1913 and 1940. Open-cut placer tailings are present along about one mile of the creek upstream from its mouth. Information about the deposit is not available, other than that some platinum was recovered along with the gold. The creek was prospected for platinum in the 1960s by the Goodnews Bay Mining Company. A sample of platinum from Snow Gulch contained 76.32 percent Pt, 8.34 percent Ir, 8.34 percent Os, 5.05 percent Ru, 1.26 percent Rh, and 0.69 percent Pd (Mertie, 1969, table 38). Snow Gulch flows along a large, vertical, notheast-trending fault in Precambrian crystalline rocks (Hoare and Coonrad, 1978).

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:
Open-cut placer tailings are present along about one mile of Snow Creek upstream from its mouth. The creek was prospected for platinum in the 1960s by the Goodnews Bay Mining Company (Merite, 1969).

Production notes:
The small amout of platinum recovered from Snow Gulch was included with the production reported by the Goodnews Bay Mining Company from the Salmon River area in the Hagemeister Island quadrangle (Mertie, 1969, pg. 89).

Reserves:

Additional comments:

References:
Harrington, 1921; Mertie, 1969; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Tyone Creek

Site type: Mine

ARDF no.: GO035

Latitude: 59.55 **Quadrangle:** GO C-7

Longitude: 161.33

Location description and accuracy:

Tyone Creek is a north tributary to Keno Creek, a north tributary of Arolik River. It is a short stream, separated from the drainage of Bessie Creek by a low saddle at an elevation of about 425 feet. The map site is on Tyone Creek, at the border of sections 22 and 27, T 7 S, R 71 W, of the Seward Meridian. This is locality 9 of Hoare and Cobb (1977) and of Cobb and Condon (1972).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Hoare and Coonrad (1961) showed this location as a placer mining locality. Additional information about the deposit is not available. The uplands in this drainage are underlain by Precambrian crystalline rocks (Hoare and Coonrad, 1978).

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: Undetermined

Site Status: Inactive

Workings/exploration:
Some small surface workings are assumed to be present at this locality.

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1961; Cobb and Condon, 1972; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Coonrad, 1961

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Arolik River

Site type: Prospect

ARDF no.: GO036

Latitude: 59.54 **Quadrangle:** GO C-7

Longitude: 161.44

Location description and accuracy:

Arolik River is a major drainage that flows northwest to the Bering Sea coast near Arolik village. This location is assumed to be near two gold-bearing tributaries, Snow Gulch (GO034) and Fox Creek (GO032). The map site is on the Arolik River between the mouths of these two creeks, in the SW 1/4 of section 30, T 7 S, R 71 W, of the Seward Meridian. It is included by Hoare and Cobb (1977) under the name 'Arolik R.'.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

The Arolik River flood plain is about 1/2 mile wide in this area, an apparently nonglaciated part of the river near the mouths of Snow Gulch (GO034) and Fox Creek (032), each containing productive gold placer deposits. Much exploration took place on Arolik River, especially in the late 1920s and early 1930s, and some local mining apparently occurred in 1932 (Hoare and Cobb, 1977, p. 27). Additional information about placer deposits along the river is not available.

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: Undetermined

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Hoare and Cobb, 1977.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Sam Creek

Site type: Prospect

ARDF no.: GO037

Latitude: 59.833 **Quadrangle:** GO D-5

Longitude: 160.794

Location description and accuracy:
Sam Creek is a west tributary to the Kanektok River. This placer prospect is about 3 miles upstream of the mouth of Sam Creek, in the NE1/4 of section 16, T 4 S, R 68 W, of the Seward Meridian. It is included in Hoare and Cobb (1977) under the name 'Sam Ck.'. The location is probably accurate within about 1/2 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Hoare and Coonrad (1961) show this site to be a placer prospect. A small sluice box and a small area of surface diggings were abandoned before 1950 (Hoare and Cobb, 1977). No additional information is available for this deposit. Bedrock in the Sam Creek drainage includes sedimentary rocks of the Cretaceous Kuskokwim Group, intruded by a small, Upper Cretaceous (68.7 3 Ma) stock (Hoare and Coonrad, 1978).

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: Undetermined

Site Status: Inactive

Workings/exploration:

A small sluice box and small surface diggings at this site were abandoned before 1950 (Hoare and Coonrad, 1977).

Production notes:

Reserves:

Additional comments:

References:

Hoare and Coonrad, 1961; Hoare and Cobb, 1977; Hoare and Coonrad, 1978.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Goodnews Bay

Site type: Occurrence

ARDF no.: GO038

Latitude: 59.09 **Quadrangle:** GO A-8

Longitude: 161.75

Location description and accuracy:
This occurrence is apparently in bottom sediments of Goodnews Bay. The map site on a mud flat at shallow depth in Goodnews Bay, about 1.5 miles south of Beluga Hill. It is included in Hoare and Cobb (1977) under the name 'Goodnews Bay'.

Commodities:

Main: Pt

Other: Hg

Ore minerals: Cinnabar, diamond (?), native mercury

Gangue minerals:

Geologic description:
Hoare and Cobb (1977, p. 35) reported that core samples of unconsolidated deposits in Goodnews Bay, apparently collected by a private company, contained detectable amounts of platinum. The platinum is said to have been concentrated in clay layers. Most samples also contained cinnabar and native mercury. One tiny diamond is also said to have been found. The highest concentrations were in the north part of the bay, south of Beluga Hill.

Alteration:

Age of mineralization:
Holocene.

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39b

Production Status: None

Site Status: Inactive

Workings/exploration:

A core sampling program was apparently completed in Goodnews Bay in 1969. A followup sampling and aeromagnetic survey was apparently completed in 1970 with unknown results (Hoare and Cobb, 1977, p. 35).

Production notes:

Reserves:

Additional comments:

References:

Hoare and Cobb, 1977.

Primary reference: Hoare and Cobb, 1977

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Little Togiak Lake

Site type: Occurrence

ARDF no.: GO039

Latitude: 59.59 **Quadrangle:** GO C-1

Longitude: 159.19

Location description and accuracy:
This occurrence is on the lower part of a stream entering the west side of Little Togiak Lake, 2 1/4 miles from the head of the lake. The map site is on the stream at an elevation of 100 feet, in the NW1/4 of section 8, T 7 S, R 58 W, of the Seward Meridian.

Commodities:

Main: Hg, Zn

Other:

Ore minerals: Pyrite

Gangue minerals:

Geologic description:
Eakins (1968, p. 13) collected several stream-sediment samples in this drainage that contained anomalous amounts of mercury and zinc. In addition, he found float of massive pods and veinlets of pyrite up to 3 inches thick in the stream. Bedrock along the stream includes several felsic dikes intruding argillite. Dikes and faults in the area generally trend east-west.

Alteration:

Age of mineralization:
Possibly Late Cretaceous or Early Tertiary. Mineralization may be related to the felsic dikes, which are inferred to be part of a regionally extensive Upper Cretaceous and Lower Tertiary plutonic suite (Hoare and Coonrad, 1978).

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:
Reconnaissance stream-sediment sampling has been completed in the area (Eakin, 1968).

Production notes:

Reserves:

Additional comments:
This occurrence is in Wood-Tikchik State Park.

References:
Eakins, 1968; Hoare and Coonrad, 1978.

Primary reference: Eakins, 1968

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Trail Creek (tributary to Arolik River)

Site type: Mine

ARDF no.: GO040

Latitude: 59.48 **Quadrangle:** GO B-7

Longitude: 161.48

Location description and accuracy:
This placer locality is assumed to be on the 1 1/2 mile segment of Trail Creek between its mouth on Butte Creek (GO033) and Kowkow Creek (GO031), an upstream south tributary. The map site is at a trail crossing at an elevation of about 400 feet, in the south 1/2 of section 14, T 8 S, R 72 W, of the Seward Meridian. It is approximately located, perhaps within a mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Harrington (1921, p. 221) reported that some gold placer mining had been done on Trail Creek before 1919. This mining is assumed to have occurred along the segment of Trail Creek between Butte Creek (GO033) and Kowkow Creek (GO031), two significant gold producers in this non-glaciated part of the Faro Creek drainage. No other information is available for this deposit. Uplands in the Trail Creek drainage are underlain by Paleozoic and Mesozoic sedimentary and volcanic rocks intruded by Jurassic mafic and ultramafic plutons (Hoare and Coonrad, 1978).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Au-PGE (Cox and Singer, 1986; 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:
Harrington, 1921; Hoare and Coonrad, 1978.

Primary reference: Harrington, 1921

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Malaria Creek

Site type: Prospect

ARDF no.: GO041

Latitude: 59.33 **Quadrangle:** GO B-7

Longitude: 161.3

Location description and accuracy:

Malaria Creek is a north tributary to Granite Creek with headwaters against the divide between Granite and Wattamuse Creeks. It is unnamed on USGS topographic maps, but is located by elevation and coordinates given by Fechner (1988) and Hoare and Cobb (1977). The confluence of Malaria and Granite Creeks is about 2 3/4 miles upstream of the mouth of Granite Creek on Goodnews River. For this record, the map site is on Malaria Creek at an elevation of 750 feet, in the NE1/4 of section 7, T 10 S, R 71 W, of the Seward Meridian.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Malaria Creek has been prospected, but mining has apparently not occurred (Hoare and Cobb, 1977). It is a small side stream in a glaciated valley. A 0.1 cubic yard placer sample collected at an elevation of 1,000 feet (Fechner, 1988) contained a trace of gold and a heavy mineral concentrate that contained anomalous geochemical values of molybdenum and tellurium. Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks intruded by an Upper Cretaceous granitic stock (Hoare and Coonrad, 1978).

Alteration:

Age of mineralization:

Holocene.

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: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:
Hoare and Cobb, 1977; Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Slate Creek (upper)

Site type: Mine

ARDF no.: GO042

Latitude: 59.35 **Quadrangle:** GO B-6

Longitude: 161.16

Location description and accuracy:
This mine or prospect is on the upper part of Slate Creek (GO020), about 1/4 mile above the junction of Fox Creek (GO018), an east tributary to Slate Creek. The map site is in the SE1/4 of section 36, T 9 S, R 71 W, of the Seward Meridian.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Fechner (1988) noted that hand mining had taken place on Slate Creek, 1/4 mile above the mouth of Fox Creek (GO018), an east tributary to Slate Creek. He also noted that another placer camp was at the mouth of Caribou Creek, about 1/4 mile upstream of this location. Fechner (1988) collected seven sediment samples along about six miles of the Slate Creek drainage above the mouth of Wattamuse Creek. The gold content of these samples ranged up to 0.0014 ounce per cubic yard. Bedrock in the area includes Paleozoic and Mesozoic sedimentary and volcanic rocks, locally intruded by Upper Cretaceous to Lower Tertiary granitic rocks and Jurassic mafic/ultramafic plutonic rocks (Hoare and Coonrad, 1978).

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: Undetermined

Site Status: Probably inactive

Workings/exploration:
Some evidence of small-scale hand mining or prospecting is apparently present at this locality (Fechner, 1988).

Production notes:

Reserves:

Additional comments:

References:
Hoare and Coonrad, 1978; Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

Site name(s): Unnamed (head of Barnum Creek)

Site type: Prospect

ARDF no.: GO043

Latitude: 59.37 **Quadrangle:** GO B-7

Longitude: 161.54

Location description and accuracy:
This placer prospect area is in the headwaters of an unnamed north tributary to upper Barnum Creek, a north tributary to lower Goodnews River. This unnamed creek and its headwater tributaries drain the southeast flank of Nagotligageivik Mountain. The map site is on the unnamed tributary at an elevation of about 450 feet, at the northeast corner of section 27, T 9 S, R 73 W, of the Seward Meridian.

Commodities:

Main: Au

Other: Pd, Pt

Ore minerals: Gold

Gangue minerals:

Geologic description:
This unnamed creek and its headwater tributaries drain the southeast flank of Nagotligageivik Mountain. Fechner (1988) collected four placer samples in the upper part of the drainage. They contained 0.0002 to 0.0010 ounce of gold per cubic yard, and heavy-mineral concentrate from one sample contained Pt and Pd values (Fechner, 1988, p. 60). The gold fineness ranged from 424 to 816. A reconnaissance of the nearby mountain found only barren chert. The gold may be reworked from glacial deposits.

Alteration:

Age of mineralization:
Holocene.

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: None

Site Status: Inactive

Workings/exploration:
Reconnaissance stream-sediment and some rock sampling has been done in the headwaters of this drainage (Fechner, 1988).

Production notes:

Reserves:

Additional comments:

References:
Fechner, 1988.

Primary reference: Fechner, 1988

Reporter(s): Travis L. Hudson

Last report date: 03/20/01

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