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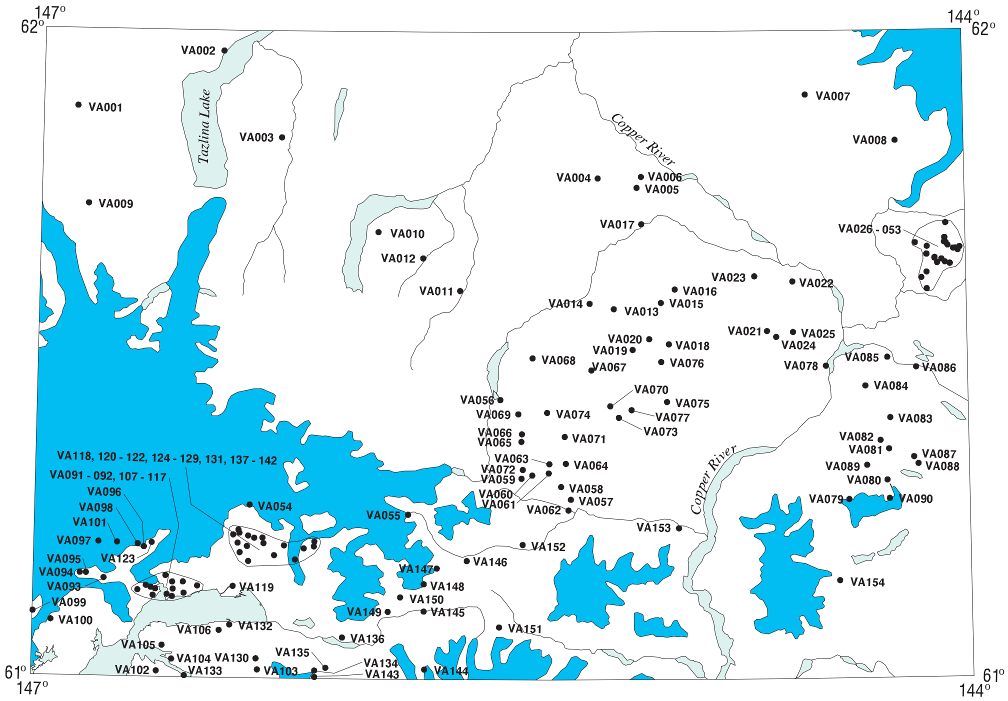
Alaska Resource Data File

Valdez 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 Valdez 1:250,000-scale quadrangle, Alaska

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

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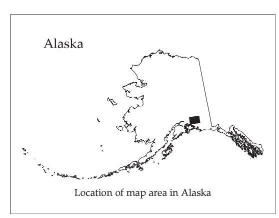

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

OPEN-FILE REPORT 03-30

Site name(s): Unnamed (on Heavenly Ridge)

Site type: Occurrence

ARDF no.: VA001

Latitude: 61.8802 **Quadrangle:** VA D-8

Longitude: 146.8892

Location description and accuracy:

This prospect is located on the southwest end of Heavenly Ridge at an elevation of about 4,200 feet; it is about eight-tenths of a mile southwest of VABM Shale in the SW1/4 section 9, T. 1 N., R. 9 W., of the Copper River Meridian. It is approximately located, perhaps to within one-half mile. This prospect is locality 84 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Mo, Zn

Other:

Ore minerals: Chalcopyrite?, molybdenite?, sphalerite?

Gangue minerals:

Geologic description:

Winkler and others (1981 [OFR 80-892-B]) reported that mafic volcanic breccia of the Jurassic Talkeetna Formation contains stringers and pods of sulfide-impregnated quartz here. The volcanic rocks are cut by a dacite plug.

Alteration:

Age of mineralization:

Post-Jurassic (?); the host rocks are in the Jurassic Talkeetna Formation (Winkler and others, 1981 [OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Veins and disseminations in mafic volcanic rocks

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Probably only reconnaissance surface examinations.

Production notes:

Reserves:

Additional comments:

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mendeltna Creek

Site type: Prospect

ARDF no.: VA002

Latitude: 61.9683 **Quadrangle:** VA D-7

Longitude: 146.4147

Location description and accuracy:
This prospect is located at the mouth of Mendeltna Creek on the northwest shore of Tazlina Lake. It is in the SE1/4 of section 12, T. 2 N., R. 7 W., of the Copper River Meridian and is probably accurately located. This prospect is locality 116 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au?

Other:

Ore minerals: Gold?

Gangue minerals:

Geologic description:
Placer claims were staked at this locality and current from 1971 to 1974 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). They are assumed to have been staked for placer gold.

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Probably only prospected.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

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

Site type: Prospect

ARDF no.: VA003

Latitude: 61.8355 **Quadrangle:** VA D-6

Longitude: 146.2221

Location description and accuracy:

This prospect is located about 2,100 feet west of Kaina Lake; it is at about 3,200 feet elevation in the SW1/4 section 30, T. 1 N., R. 5 W., of the Copper River Meridian. It is approximately located, perhaps within one-half mile. This prospect is localiy 115 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals:

Gangue minerals:

Geologic description:

Lode claims were staked for gold deposits at this locality in 1968 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). No other information is available. The location is near the contact between Jurassic (?) intrusive rocks and volcanic rocks of the Jurassic Talkeetna Formation (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Not known; host rocks are probably Jurassic (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Probably only reconnaissance surface examinations have taken place.

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Willow Mountain

Site type: Occurrence

ARDF no.: VA004

Latitude: 61.7745 **Quadrangle:** VA D-4

Longitude: 145.1920

Location description and accuracy:

This prospect is located on the east flank of Willow Mountain, about one-half mile west of the Richardson Highway; it is at an elevation of about 3,000 feet in the northeast corner of section 22, T. 1 S., R. 1 E., of the Copper River Meridian. This prospect is approximately located, perhaps within one-quarter mile. It is locality 53 of Cobb and Matson (1972) and locality 44 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Zn

Other:

Ore minerals: Chalcopyrite, hydrozincite, malchite, pyrite

Gangue minerals:

Geologic description:

Hydrozincite and smaller amounts of chalcopyrite and malachite are sparsely but widely disrtibuted in limestone of the Jurassic Talkeetna Formation (Berg and Cobb, 1967, p. 52; Winkler and others, 1981 [OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Oxidation; hyrdozincite is a secondary, hydrous carbonate of zinc.

Age of mineralization:

Jurassic or younger; the host rocks have been assigned to the Jurassic Talkeetna Formation (Winkler and others, 1981 [OFR 80-892-A].

Deposit model:

Disseminations or replacements in limestone

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

Production Status: None

Site Status: Undetermined

Workings/exploration:
Only reconnaissance work has been carried out.

Production notes:

Reserves:

Additional comments:

References:
Berg and Cobb, 1967; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Berg and Cobb, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (east of Willow Creek)

Site type: Prospect

ARDF no.: VA005

Latitude: 61.7598 **Quadrangle:** VA D-3

Longitude: 145.0657

Location description and accuracy:

This prospect is about 1.7 miles west of the Old Edgerton Highway and seven-tenths of a mile southeast of the junction of Willow and Rock Creeks. It is in the NW1/4 section 28, T. 1 S., R. 2 E., of the Copper River Meridian. This prospect is approximately located, perhaps within one-half mile. It is locality 101B of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au?

Other:

Ore minerals: Gold?

Gangue minerals:

Geologic description:

Lode claims were staked at this locality in 1969 and 1970 but no other information is available (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Outcrops are limited in this area. Nearby bedrock includes Jurassic mafic intrusive rocks and andesitic volcanic rocks and limestone of to the Jurassic Talkeetna Formation (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Not known; nearby bedrock includes Jurassic mafic intrusive rocks and andesitic volcanic rocks and limestone assigned to the Jurassic Talkeetna Formation (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
There is no record of exploration.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Willow Creek

Site type: Prospect

ARDF no.: VA006

Latitude: 61.7766 **Quadrangle:** VA D-3

Longitude: 145.0514

Location description and accuracy:

This prospect is one-half mile west of triangulation station Kenny along the Old Edgerton Highway. It is at an elevation of about 130 feet in the SE1/4 section 16, T. 1 S., R. 2 E., of the Copper River Meridian. This prospect is approximately located, perhaps within one-half mile. It is locality 101A of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au?

Other:

Ore minerals: Gold?

Gangue minerals:

Geologic description:

Lode claims were staked at this locality in 1969 and 1970 but no other information is available (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Outcrops are limited in this area; nearby bedrock includes Jurassic mafic intrusive rocks and andesitic volcanic rocks and limestone of the Jurassic Talkeetna Formation (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Not known; nearby bedrock includes Jurassic mafic intrusive rocks and andesitic volcanic rocks and limestone of the Jurassic Talkeetna Formation (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
No record of exploration.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Chetaslina River)

Site type: Prospect

ARDF no.: VA007

Latitude: 61.9016 **Quadrangle:** VA D-1

Longitude: 144.5141

Location description and accuracy:

This prospect is on the west side of the canyon of the Chichokna River, about one-half mile upstream of its mouth on the Chitaslina River. The map site is in the NW1/4 section 4, T. 1 N., R. 5 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 112 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Ba, Cu?

Ore minerals: Chalcopyrite?, pyrite

Gangue minerals: Barite

Geologic description:

Iron-stained greenschist and calc-schist rocks, tentatively correlated with the Paleozoic Skolai Group (Winkler and others, 1981[OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]), have been prospected with dozer trenches (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Pyrite, barite, and possibly chalcopyrite are reported. The age and type of deposit are not known.

Alteration:

Oxidation.

Age of mineralization:

Not known; host metamorphic rocks are probably Paleozoic or older in age.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Dozer trenches have been used to prospect at this locality.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Preserve.

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-A); Winkler and others, 1981 (OFR 80-892-B).

Primary reference: Winklerand others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Cheshnina River)

Site type: Prospect

ARDF no.: VA008

Latitude: 61.8298 **Quadrangle:** VA D-1

Longitude: 144.2230

Location description and accuracy:

This prospect is on the east slope of the valley of a small north tributary of the Cheshnina River. The map site is at an elevation of about 4,500 feet near the northeast boundary of section 36, T. 1 N., R. 6 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within a half-mile. It is locality 111 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu?

Other: Ag?, Au?

Ore minerals: Native copper?

Gangue minerals:

Geologic description:

This prospect is near the basal contact of the Triassic Nikolai Greenstone, which unconformably overlies carbonate rocks of the Skolai Group (Winkler and others, 1981 [OFR 80-892-B]; Winkler and others,1981 [OFR 80-892-A). Native copper has been observed in Nikolai Greenstone nearby; it partly to completely fills amygdules and other open spaces in the host basalt. This copper may have been mobilized and deposited as part of the main copper mineralizing event in the region. This event is interpreted to be related to Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Alteration:

Oxidation.

Age of mineralization:

Native copper in Nikolai Greenstone may have been mobilized and deposited as part of the main copper mineralizing event in the region. This event is interpreted to be related to Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:
Native copper filling amygdules and other open spaces in basalt?

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

Production Status: None

Site Status: Inactive

Workings/exploration:
There are three patented mining claims at this location (Winkler and others, 1981[OFR 80-892-B]). At least some surface prospecting has probably taken place here.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Preserve.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (on upper Barnette Creek)

Site type: Prospect

ARDF no.: VA009

Latitude: 61.7299 **Quadrangle:** VA C-8

Longitude: 146.8474

Location description and accuracy:

This prospect is on the ridge crest on the north side of upper Barnette Creek. It is on a saddle at an elevation of about 6,000 feet very close to the northwest corner of section 3, T. 2 S., R. 9 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 83 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cr

Other: Ni, Pt?

Ore minerals:

Gangue minerals:

Geologic description:

Winkler and others (1981 [OFR 80-892-B]) reported that test pits have been dug in serpentinized ultramafic rocks at this locality. The ultramafic rocks are blocks in a melange that is structurally below the Border Ranges fault (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Serpentinization.

Age of mineralization:

Not known; the ultramafic rocks were incorporated in melange which is intruded by undeformed hornblende andesite and dacite dikes of inferred Tertiary age (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Podifrom chromite? (Cox and Singer, 1986; model 8a)

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

8a?

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Surface test pits have been dug at this locality (Winkler and others, 1981 [OFR 80-892-B]).

Production notes:

Reserves:

Additional comments:

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Marshall Mountain

Site type: Prospect

ARDF no.: VA010

Latitude: 61.6906 **Quadrangle:** VA C-6

Longitude: 145.9047

Location description and accuracy:
This prospect is about one-third mile northwest of the north peak of Marshall Mountain. It is at an elevation of about 4,200 feet near the center of the SW1/4 section 14, T. 2 S., R. 4 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 82 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, pyrite, pyrrhotite

Gangue minerals:

Geologic description:
Winkler and others (1981 [OFR 80-892-B]) reported that sheared pillow basalt and massive greenstone contains pyrite, pyrrhotite, and chalcopyrite. Old cabins are present at this prospect, below it at timberline, and nearby on Klutina Lake. The metavolcanic rocks are part of the McHugh Complex melange (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Not known; the host metavolcanic rocks were probably incorporated in the McHugh Complex in the Late Cretaceous (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:
Cyprus massive sulfide? (Cox and Singer, 1986; model 24a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
24a?

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Only some exploration pits.

Production notes:

Reserves:

Additional comments:

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Manker Creek

Site type: Prospect

ARDF no.: VA011

Latitude: 61.6005 **Quadrangle:** VA C-5

Longitude: 145.6387

Location description and accuracy:
About 6 miles of upper Manker Creek were shown by Winkler and others (1981 [OFR 80-892-B], locality 113) as a placer gold prospect. The map coordinates are the approximate midpoint of the placer prospect. in the NW1/4 section 20, T. 3 S., R. 2 W., of the Copper River Meridian.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
About 6 miles of upper Manker Creek were shown by Winkler, Miller, and others (1981 [OFR 80-892-B], locality 113) as a placer gold prospect. Gold was reported to be present on Manker Creek as early as 1900 (Schrader, 1900, p. 422) and placer claims have been staked in this area (U.S. Bureau of Mines, 1980). Bedrock in the Manker Creek drainage includes metavolcanic and metasedimentary rocks of the McHugh Complex and metasedimentary rocks of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). The Valdez Group hosts many gold-bearing quartz veins in the southern Valdez quadrangle.

Alteration:

Age of mineralization:
Holocene.

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

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

39a

Production Status: None

Site Status: Undetermined

Workings/exploration:
Probably has been at least some prospecting for gold along 6 miles of Manker Creek.

Production notes:

Reserves:

Additional comments:

References:
Schrader, 1900; U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mahlo River

Site type: Prospect

ARDF no.: VA012

Latitude: 61.6505 **Quadrangle:** VA C-5

Longitude: 145.7590

Location description and accuracy:
More than 10 miles of the Mahlo River between about 1,950 and 3,600 feet elevation are shown by Winkler and others (1981 [OFR 80-892-B], locality 114) as a placer prospect. The map coordinates are the approximate midpoint of the placer prospect in the SW1/4 section 34, T. 3 S., R. 3 W., of the Copper River Meridian.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
More than 10 miles of the Mahlo River were shown by Winkler and others (1981 [OFR 80-892-B], locality 114) as a placer gold prospect. Gold was reported to be present on Mahlo River as early as 1900 (Schrader, 1900, p. 422; Moffit, 1935, p. 36), and placer claims have been staked in this area (U.S. Bureau of Mines, 1980). Bedrock in the Mahlo River drainage includes metavolcanic and metasedimentary rocks of the McHugh Complex and metasedimentary rocks of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). The Valdez Group hosts many gold-bearing quartz veins in the southern Valdez quadrangle.

Alteration:

Age of mineralization:
Holocene.

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

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

39a

Production Status: None

Site Status: Undetermined

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Schrader, 1900; Moffit, 1935; U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Bernard Mountain (Red Mountain)

Site type: Prospect

ARDF no.: VA013

Latitude: 61.5725 **Quadrangle:** VA C-4

Longitude: 145.1411

Location description and accuracy:

This prospect is located near VABM Bernard on the northern-most high divide between Bernard Creek and the Little Tonsina River. It is about 3 miles east of the Richardson Highway. The prospect is near the middle of the south boundary of section 25, T. 3 S., R. 1 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within a mile. It is locality 42 of Winkler and others (1981 [OFR 80-892-B]). Cobb and Matson (1972, locality 51) erroneously show this prospect to be located about 3 miles to the southwest of the location used by Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cr

Other: Ni, PGE

Ore minerals: Chromite, PGE minerals

Gangue minerals: Olivine, pyroxene

Geologic description:

Dunite, pyroxenite, and peridotite in the Tonsina ultramafic complex (Winkler and others, 1981[OFR 80-892-B]; Burns, 1985; Foley and others, 1988) contain disseminated chromite, some podiform chromite, and local anomalous concentrations of nickel and platinum-group metals. At Bernard Mountain, seven low-grade deposits of banded and disseminated chromite in dunite are estimated to contain 343,000 tons of Cr2O3 (Berg and Cobb, 1967; Hoffman, 1972; Foley and Barker, 1985; Foley and others, 1986; Dahlin and others, 1985). High-grade samples contain 36.0 to 57.7 percent chromite with a chrome to iron ratio of 1.20 to 3.06. The maximum nickel concentration is 5,000 ppm (Hoffman, 1972). Two chromite-rich table concentrate samples contained 823 and 1,749 ppb palladium, but PGEs were not detected in other samples from Bernard Mountain (Foley and others, 1988; 1989). The Tonsina ultramafic complex may be a deep part of large gabbroic plutons in the root zones of the Jurassic Talkeetna arc (Winkler and others, 1981 [OFR 80-892-A]; Burns, 1985). Because the Tonsina ultramafic complex contains granulites and tectonized harzburgite and dunite, it may have some mantle components and in part be older than Jurassic mafic and ultramafic intrusives of the region (Burns,

1985).

Alteration:

Serpentinization is widespread in the ultramafic rocks.

Age of mineralization:

The Tonsina ultramafic complex may be a deep part of large gabbroic plutons in the root zones of the Jurassic Talkeetna arc (Winkler and others, 1981 [OFR 80-892-A]; Burns, 1985). Because the Tonsina ultramafic complex contains granulites and tectonized harzburgite and dunite, it may have some mantle components and in part be older than Jurassic mafic and ultramafic intrusives of the region (Burns, 1985).

Deposit model:

Podifrom chromite (Cox and Singer, 1986; model 8a)

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

8a

Production Status: None

Site Status: Undetermined

Workings/exploration:

Considerable reconnaissance surface oberservations and sampling have been carried out.

Production notes:

Reserves:

At Bernard Mountain, seven low-grade deposits of banded and disseminated chromite in dunite are estimated to contain 343,000 tons of Cr2O3 (Berg and Cobb, 1967; Hoffman, 1972; Foley and Barker, 1985; Foley and others, 1986; Dahlin and others, 1985).

Additional comments:

References:

Berg and Cobb, 1967; Hoffman, 1972; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Burns, 1985; Dahlin and others, 1985; Foley and Barker, 1985; Foley and others, 1986; Foley and others, 1988; Foley and others, 1989.

Primary reference: Foley and others, 1988

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Little Tonsina River

Site type: Occurrence

ARDF no.: VA014

Latitude: 61.5809 **Quadrangle:** VA C-4

Longitude: 145.2193

Location description and accuracy:
This occurrence is on the east side of the Richardson Highway about 1.1 miles south of VABM Brown; it is at an elevation of about 1,800 feet in the SE1/4 section 28, T. 3 S., R. 1 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is locality 90 of Cobb and Matson (1972).

Commodities:

Main: W

Other:

Ore minerals: Scheelite

Gangue minerals:

Geologic description:
Jasper (1967) found small amounts of scheelite in heavy mineral concentrate from stream gravels at this locality. Streams in this area drain uplands where both footwall and hanging wall metamorphic and igneous rocks of the Border Ranges fault are present (Winklerand others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Holocene.

Deposit model:
Modern placer occurrence of scheelite

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only reconnaissance surface sampling has taken place in this area.

Production notes:

Reserves:

Additional comments:

References:
Jasper, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Jasper, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Sheep Hill; Dust Mountain (west)

Site type: Prospect

ARDF no.: VA015

Latitude: 61.5818 **Quadrangle:** VA C-3

Longitude: 144.9887

Location description and accuracy:

This prospect is near the summit of hill 5,140, on the divide between Bernard and Dust Creeks. It is in the NE1/4 section 26, T. 3 S., R. 2 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 43B of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cr

Other: Ni, PGE

Ore minerals: Chromite, chromium spinel, PGE minerals

Gangue minerals: Olivine, pyroxene

Geologic description:

Dunite, pryoxenite, and peridotite of the Tonsina ultramafic complex (Winkler and others, 1981 [OFR 80-892-A]; Burns, 1985; Foley and others, 1988) contain disseminated chromite, some podiform chromite, and local anomalous concentrations of nickel and platinum-group metals. At Sheep Hill, two low-grade, high-iron deposits with 5 percent chromite contain some PGE values (Foley and Barker, 1985; Foley and others, 1986; Dahlin and others, 1985; Foley and others, 1988, 1989). Samples from a 210- by 300-foot area contain as much as 927 ppb PGEs, including 515 ppb platinum (Pt) and 412 ppb palladium (Pd); Pt/Pt+Pd ratios range from 0.57 to 0.75. The PGEs are commonly associated with chromium spinel (Foley and others, 1988). The Tonsina ultramafic complex may be a deep part of large gabbroic plutons in the root zones of the Jurassic Talkeetna arc (Winkler and others, 1981 [OFR 80-892-A]; Burns, 1985). Because the Tonsina ultramafic complex contains granulites and tectonized harzburgite and dunite, it may have some mantle components and may in part be older than Jurassic mafic and ultramafic intrusives of the region (Burns, 1985).

Alteration:

Minor serpentinization is probably present.

Age of mineralization:

The Tonsina ultramafic complex may be deep parts of large gabbroic plutons in the root zones of the Jurassic Talkeetna arc (Winkler and others, 1981 [OFR 80-892-A]; Burns, 1985). Because the Tonsina ultramafic complex contains granulites and tectonized harzburgite and dunite, it may have some mantle components and may in part be older than Jurassic mafic and ultramafic intrusives of the region (Burns, 1985).

Deposit model:

Podifrom chromite (Cox and Singer, 1986; model 8a)

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

8a

Production Status: None

Site Status: Undetermined

Workings/exploration:

Considerable reconnaissance surface oberservations and sampling have been carried out.

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Burns, 1985; Dahlin and others, 1985; Foley and Barker, 1985; Foley and others, 1986; Foley and others, 1988; Foley and others, 1989.

Primary reference: Foley and others, 1988

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Dust Mountain

Site type: Prospect

ARDF no.: VA016

Latitude: 61.6025 **Quadrangle:** VA C-3

Longitude: 144.9436

Location description and accuracy:

This prospect is one-half mile northwest hill 5,210 (which is informally but commonly referred to as 'Dust Mountain') and 1.2 mile due east of Dust Creek. It is at an elevation of about 4,700 feet near the southwest corner of section 18, T. 3 S., R. 3 E., of the Copper River Meridian. This prospect is approximately located, perhaps to wtithin one-ha;f mile. It is locality 52 of Cobb and Matson (1972) and 43A of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cr

Other: Ni, PGE

Ore minerals: Chromite, chromium spinel, PGE minerals

Gangue minerals: Olivine, pyroxene

Geologic description:

Dunite, pyroxenite, and peridotite of the Tonsina ultramafic complex (Winkler and others, 1981 [OFR 80-892-A]; Burns, 1985; Foley and others, 1988) contain disseminated chromite, some podiform chromite, and local anomalous concentrations of nickel and platinum-group metals. At Dust Mountain, a 190-foot by 3,600-foot area was estimated to contain 2.6 to 5.3 million tons of chromic oxide (Berg and Cobb, 1967; Foley and Barker, 1985; Foley and others, 1986; Dahlin and others, 1985). High-grade samples contained 36.0 to 57.7 percent chromite, with a chrome to iron ratio of 1.20 to 3.06. Samples of chromatite contained as much as 11,936 ppb palladium (Pd), 8,918 ppb platinum (Pt), 330 ppb iridium, 87 ppb osmium, 550 ppb rhenium, and 140 ppb ruthenium (Foley and others, 1988, 1989). Pt/Pt+Pd ratios ranged from 0.44 to 0.87. Identified PGE minerals include PGE-amalgams, arsenides, alloys, and sulfides (Foley and others, 1988). The PGE-bearing minerals are concentrated along fractures and grain boundaries in serpentinized, metasomatically altered, high chromium spinel. Maximum PGE concentrations are in malchite- and native copper-bearing magnetic chromatites associated with dunite and coarse-grained clinopyroxenite. The Tonsina ultramafic complex may be deep parts of large gabbroic plutons in the root zones of the Jurassic Talkeetna arc (Winkler

and others, 1981 [OFR 80-892-A]; Burns, 1985). Because the Tonsina ultramafic complex contains granulites and tectonized harzburgite and dunite, it may have some mantle components and in may part be older than Jurassic mafic and ultramafic intrusives of the region (Burns, 1985).

Alteration:

Sepentinization.

Age of mineralization:

The Tonsina ultramafic complex may be deep parts of large gabbroic plutons in the root zones of the Jurassic Talkeetna arc (Winkler and others, 1981 [OFR 80-892-A]; Burns, 1985). Because the Tonsina ultramafic complex contains granulites and tectonized harzburgite and dunite, it may have some mantle components and in may part be older than Jurassic mafic and ultramafic intrusives of the region (Burns, 1985).

Deposit model:

Podifrom chromite (Cox and Singer, 1986; model 8a)

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

8a

Production Status: None

Site Status: Undetermined

Workings/exploration:

Considerable reconnaissance surface oberservations and sampling have been completed.

Production notes:

Reserves:

At Dust Mountain, a 190-foot by 3,600-foot area was estimated to contain 2.6 to 5.3 million tons of chromic oxide (Berg and Cobb, 1967; Foley and Barker, 1985; Foley and others, 1986; Dahlin and others, 1985).

Additional comments:

References:

Berg and Cobb, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Burns, 1985; Dahlin and others, 1985; Foley and Barker, 1985; Foley and others, 1986; Foley and others, 1988; Foley and others, 1989.

Primary reference: Foley and others, 1988

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Tonsina River

Site type: Occurrence

ARDF no.: VA017

Latitude: 61.7035 **Quadrangle:** VA C-3

Longitude: 145.0510

Location description and accuracy:
This placer gold occurrence is on the Tonsina River at the mouth of Dust Creek inthe SE1/4 section 9, T. 2 S., R. 2 E., of the Copper River Meridian. It is locality 100 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold claims were staked and kept active from 1973 to 1978 (U.S. Bureau of Mines, 1980; Winkler and others, 1981[OFR 80-892-B]). Bedrock in the valley of Dust Creek includes the Tonsina ultramafic complex (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Some surface exploration has occurred here.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (east of Kimball Pass)

Site type: Prospect

ARDF no.: VA018

Latitude: 61.5179 **Quadrangle:** VA C-3

Longitude: 144.9634

Location description and accuracy:
This prospect is located on the ridge crest between the east and west headwater tributaries of Bernard Creek near elevation (peak) 5108. It is in the SW1/4 section 13, T. 4 S., R. 2 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is locality 99 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Lode claims were staked on gold-bearing veins in schist near the fault contact between the Haley Creek and Fox Creek terranes (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Schist of the Haley Creek and Fox Creek terranes was probably metamorphosed in the mid-Cretaceous (Winkler and others, 1981 [OFR 80-892-A]). Veins that cross cut this schist are probably Late Cretaceous or Tertiary in age.

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a?

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Kimball Pass (west)

Site type: Prospect

ARDF no.: VA019

Latitude: 61.5095 **Quadrangle:** VA C-3

Longitude: 145.0808

Location description and accuracy:

This prospect is located about 1.2 miles west-southwest of the lake in Kimball Pass and six-tenths of a mile northeast of elevation (peak) 4706. The location is close to the center of section 20, T. 4 S., R. 2 E., of the Copper River Meridian. This prospect is approximately lcoated, perhaps to within one-quarter mile. It is locality 96 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Lode claims were staked on gold-bearing veins in schist of the Haley Creek terrane at this locality (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B] Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Schist of the Haley Creek terrane was probably metamorphosed in the mid-Cretaceous (Winkler and others, 1981 [OFR 80-892-A]). Veins that cross cut this schist are probably Late Cretaceous or Tertiary in age.

Deposit model:

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

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

36a?

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Kimball Pass (east)

Site type: Prospect

ARDF no.: VA020

Latitude: 61.5260 **Quadrangle:** VA C-3

Longitude: 145.0271

Location description and accuracy:

This prospect is about 1.2 miles northeast of Kimball Pass on the east side of the valley of the upper west fork of Bernard Creek. It is at an elevation of about 3,300 feet in the NE1/4 section 15, T. 4 S., R. 2 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 97 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au?

Other:

Ore minerals: Gold?

Gangue minerals:

Geologic description:

A lode claim was staked in 1956 schist of the Haley Creek terrane at this locality (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B] ; Winkler, Silberman, and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Schist of the Haley Creek terrane was probably metamorphosed in the mid-Cretaceous (Winkler and others, 1981 [OFR 80-892-A]). Veins that cross cut this schist are probably Late Cretaceous or Tertiary in age.

Deposit model:

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

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

36a?

Production Status: None

Site Status: Inactive

Workings/exploration:

A claim was staked in 1956 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). The nature of workings or exploration at this prospect is not known.

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Opal; Tiger Mining Co.

Site type: Mine

ARDF no.: VA021

Latitude: 61.5371 **Quadrangle:** VA C-2

Longitude: 144.6462

Location description and accuracy:

This prospect is located in the cirque at the southwest head of Liberty Creek. It is in the southeast headwall of this cirque, about nine-tenths of a mile north of elevation 5,285. It is at an elevation of 4,400 feet in the NW1/4 section 11, T. 4 S, R. 4 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 54 of of Cobb and Matson (1972) and locality 45 of Winkler and others (1981 [OFR 80-892-B]). The location used in this report is that shown by Winkler and others (1981 [OFR 80-892-B]); it is nine-tenths of a mile north of the location shown by Cobb and Matson (1972).

Commodities:

Main: Au

Other: Ag, Pb, Zn

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

Gangue minerals: Quartz

Geologic description:

Widely spaced quartz veins as much as 1 meter wide cut the schist of both the Liberty Creek terrane and Eocene tonalite (Winkler and others, 1981 [OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]). The veins contain arsenopyrite, pyrite, galena, and sphalerite.

Alteration:

Age of mineralization:

Tertiary; the quartz veins cut tonalite with a K/Ar age of 52.4 +/- 2.6 m. y. (Winkler and others 1981 [OFR 80-892-A]).

Deposit model:

Polymetallic veins (Cox and Singer, 1986; model 22c)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
The type of workings have not been reported.

Production notes:

Reserves:

Additional comments:

References:
Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Liberty Falls)

Site type: Prospect

ARDF no.: VA022

Latitude: 61.6133 **Quadrangle:** VA C-2

Longitude: 144.5624

Location description and accuracy:

This prospect is located on the west side of Liberty Creek valley about 3,700 feet southwest of the Edgerton Highway. It is at an elvation of 1,700 feet in the northeast corner of section 17, T. 3 S., R. 5 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-quarter mile. It is locality 56 of of Cobb and Matson (1972) and locality 47 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Mn

Other:

Ore minerals: Manganite

Gangue minerals: Quartz

Geologic description:

Chloritic schists of the Liberty Creek terrane (Winkler and others, 1981 [OFR 80-892-B]) contain discontinuous, lenses, veins, and veinlets that contain quartz and manganite (Jasper, 1967; Berg and Cobb, 1967). Individual lenses are 1 to 5 feet thick and as much as 40 feet long; veins are as much as 3 inches wide. Veins occur irregularly over a strike lenth of about a mile in the schist. Selected specimens assayed as much as 58.7 percent manganese (Berg and Cobb, 1967, p. 49).

Alteration:

Age of mineralization:

Not known; the schist in the Liberty Creek terrane was probably metamorphosed during the mid-Cretaceous (Winkler, Silberman, and others, 1981).

Deposit model:

Quartz-manganite veins

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

Production Status: None

Site Status: Inactive

Workings/exploration:

The Liberty Creek prospect was explored with a few shallow trenches in 1959 (Berg and Cobb, 1967).

Production notes:

Reserves:

Additional comments:

References:

Berg and Cobb, 1967; Jasper, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Berg and Cobb, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (Hundell Creek)

Site type: Prospect

ARDF no.: VA023

Latitude: 61.6219 **Quadrangle:** VA C-2

Longitude: 144.6856

Location description and accuracy:

This prospect is in the Hundell Creek valley about 2.3 miles south of its mouth on the Tonsina River and one-third mile east of elevation (peak) 4430. It is at an elevation of 3,200 feet in the SE1/4 section 9, T. 3 S., R. 4 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-quarter mile. It is locality 102 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

A lode claim was staked at this locality (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Bedrock is mafic metavolcanic and metasedimentary rocks of the polydeformed Liberty Creek terrane (Metz, 1975; Winkler and others, 1981 [OPFR 80-892-A]). The nature of the mineralization here is not known.

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

A lode claim has been staked at this locality, but there is no other information available.

Production notes:

Reserves:

Additional comments:

References:

Metz, 1975; U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near head of Fox Creek)

Site type: Prospect

ARDF no.: VA024

Latitude: 61.5280 **Quadrangle:** VA C-2

Longitude: 144.6166

Location description and accuracy:

This prospect is located on the southwest side of the plateau at the headwaters of Liberty, Fivemile, and Fox Creeks. It is about one-half mile southwest of elevation (peak) 5561; it is at an elevation of 5,400 feet near the southwest corner of section 12, T. 4 S., R. 4 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is locality 103 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ba, Mn

Ore minerals:

Gangue minerals:

Geologic description:

The U.S. Bureau of Mines (1980) reported that lode claims were staked and maintained at this locality from 1971 to 1979. The commodities associated with these claims are copper, barium (barite?), and manganese (Winkler and others, 1981 [OFR 80-892-B]). The mineralization is within schist of the Liberty Creek terrane (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Not known; the Fox Creek terrane was probably deformed and metamorphosed in the mid-Cretaceous (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The nature of workings or exploration at this prospect is not known.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Fivemile Creek

Site type: Prospect

ARDF no.: VA025

Latitude: 61.5353 **Quadrangle:** VA C-2

Longitude: 144.5621

Location description and accuracy:

This prospect is located in the western cirque at the headwaters of Fivemile Creek; it is about 1.3 miles east of elevation (peak) 5561 at an elevation of 4,300 feet in the SE1/4 section 7, T. 4 S., R. 5 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 55 of Cobb and Matson (1972) and locality 46 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Ag, Au, Pb

Other:

Ore minerals: Galena

Gangue minerals:

Geologic description:

Berg and Cobb (1967) reported that this lode prospect contains gold and silver. A specimen supposedly from this prospect was rich in galena. Bedrock in the area is schist of the Liberty Creek terrane (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Not known; schist in the Liberty Creek terrane was probably metamorphosed during the mid-Cretaceous (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:

References:

Berg and Cobb, 1967; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Berg and Cobb, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Canning

Site type: Prospect

ARDF no.: VA026

Latitude: 61.6173 **Quadrangle:** VA C-1

Longitude: 144.1440

Location description and accuracy:

This prospect is located near lower Benito Creek; it is at an elevation of 2,600 feet in the SE1/4 section 9, T. 3 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within 1 mile. It is locality 74 of Cobb and Matson (1972) and locality 59 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) included this prospect under the name 'Elliot Cr.'.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Arsenopyrite, chalcopyrite, gold, pyrite

Gangue minerals: Calcite, quartz

Geologic description:

Quartz-calcite veins in mafic intrusive and metavolcanic rocks of the Paleozoic Skolai Group contain bornite, chalcopyrite, arsenopyrite, pyrite, and free gold. Secondary minerals include local malachite and azurite stains. The principal vein is 2 to 3 feet wide, strikes northwest, and dips steeply to the southeast (Moffit, 1921; Moffit and Mertie, 1923, p. 142-143). This vein has been traced over a distance of about 600 feet by five shallow holes and several open cuts produced by sluicing. It is extensively oxidized and gossanous at the surface. Other veins are present nearby, one of which may contain specular hematite. The Skolai Group is locally intruded by mafic to intermediate Jurassic plutons in this area. The veins postdate the Paleozoic Skolai Group and appear to postdate the Late Jurassic or Early Cretaceous deformation and metamorphism in the region (Winkler and others, 1981[OFR 80-892-A; MacKevett and others, 1997).

Alteration:

Oxidized; extensive development of iron oxides near the surface.

Age of mineralization:

The veins postdate the Paleozoic Skolai Group and appear to postdate the Late Jurassic

or Early Cretaceous deformation and metamorphism in the region (Winkler and others, 1981[OFR 80-892-B]; MacKevett and others, 1997).

Deposit model:
Polymetallic veins? (Cox and Singer, 1986; model 22c)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c?

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
The principal vein at this prospect has been traced over a distance of about 600 feet by five shallow holes and several open cuts produced by sluicing.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit, 1921; Moffit and Mertie, 1923; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Copper King; Swazie

Site type: Prospect

ARDF no.: VA027

Latitude: 61.6385 **Quadrangle:** VA C-1

Longitude: 144.0511

Location description and accuracy:

This prospect is near Queens Creek on the north side of the valley of upper Elliott Creek (Moffit and Mertie, 1923, locality 23, plate 3). The map site is at an elevation of 4,500 in the NE1/4 section 1, T. 3 S., R. 7 E., of the Copper River Meridian. These prospects are approximately located, perhaps to within one-half mile. They are included in locality 69 of Cobb and Matson (1972) and locality 56 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) incuded these prospects under the name 'Elliot Cr.'.

Commodities:

Main: Cu

Other: Ag, Au

Ore minerals: Azuite, bornite, chalcanthite, chalcocite, malachite, pyrite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

Mineralized shear zones, as much as 10 feet thick, that contain thin veins, films, and disseminations of bornite, chalcocite, and pyrite cut Triassic Nikolai Greenstone (Moffit and Maddren, 1909; Moffit and Mertie, 1923) . Locally present gangue minerals are commonly quartz, calcite, and epidote associated with the secondary copper minerals malachite, azurite, and some chalcanthite (Berg and Cobb, 1967, p. 43). Some mineralization occurs as irregular pods in greenstone. Similar copper-bearing mineralization is present in Triassic Chitistone Limestone at the Swazi prospect. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliot Creek. The mineralized shear zone at the Copper King prospect trends parallel to the deformed greenstone-limestone contact. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:

Thin veins, impregnations, and fracture fillings in sheared limestone and greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Prospects in the Elliot Creek area were mostly explored with small open cuts.

Production notes:

Reserves:

Additional comments:

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

References:

Moffit and Maddren, 1909; Moffit and Mertie, 1923; Berg and Cobb, 1967; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mineral King

Site type: Prospect

ARDF no.: VA028

Latitude: 61.6385 **Quadrangle:** VA C-1

Longitude: 144.0511

Location description and accuracy:

This prospect is near Queens Creek on the north side of upper Elliott Creek valley. It is immediately east of the Copper King prospect (VA027; Moffit and Maddren, 1909, p. 64) at an elevation of of about 4,500 in the NE1/4 section 1, T. 3 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is lincluded in locality 69 of Cobb and Matson (1972) and locality 56 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, chalcopyrite

Gangue minerals: Quartz

Geologic description:

Triassic Nikolai Greenstone is cut by a shear zone that contains two, 4- to 6-foot-thick zones containing local concentrations of bornite, chalcocite, and some chalcopyrite (Moffit and Mertie, 1923). In places the bornite and chalcocite replace the greenstone. A selected sample contained 10.85 percent copper (Mendenhall and Schrader, 1903, p. 24). The shear trends N35E and dips 30 degrees south. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliot Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Juras-

sic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Open cuts were probably used to explore this prospect.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Mendenhall and Schrader, 1903; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mary Ellen

Site type: Prospect

ARDF no.: VA029

Latitude: 61.6467 **Quadrangle:** VA C-1

Longitude: 144.1001

Location description and accuracy:

This prospect is near Rainbow Creek on the north side of Elliott Creek valley (Moffit and Mertie, 1923, locality 22, plate 3); it is at an elevation of about 4,100 feet in the SW1/4 section 35, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is included in locality 65 Cobb and Matson (1972) and locality 55 of Winkler and others (1981[OFR 80-892-B]).

Commodities:

Main: Au, Cu

Other:

Ore minerals: Chalcopyrite, gold, pyrite

Gangue minerals:

Geologic description:

Triassic Nikolai Greenstone is shattered and mineralized with pyrite and chalcopyrite at this prospect; gold was reported to be present in weathered surface material (Moffit, 1915). The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliott Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was explored with an adit and open cuts.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit, 1915; Moffit and Mertie, 1923; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Goodyear

Site type: Prospect

ARDF no.: VA030

Latitude: 61.6471 **Quadrangle:** VA C-1

Longitude: 144.1001

Location description and accuracy:

This prospect is near Rainbow Creek on the north side of Elliott Creek valley (Moffit and Mertie, 1923, locality 21, plate 3); it is at an elevation of about 4,100 feet in the SW1/4 section 35, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is included in locality 65 Cobb and Matson (1972) and locality 55 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag

Ore minerals: Bornite, chalcopyrite, pyrite

Gangue minerals: Calcite, quartz

Geologic description:

A shear zone in Triassic Nikolai Greenstone contains a 4-foot-thick, 8-foot-long, tabular, fault-bounded body with bornite, chalcopyrite,and pyrite (Mendenhall and Schrader, 1903; Moffit and Mertie, 1923). Bornite and chalcopyrite also occur in sheeted calcite veins and associated with quartz and calcite in fracture zones. The lenticular mineralization at the Goodyear prospect may be a faulted segment of the sulfide-bearing body at the Henry Prather prospect (VA032). The Goodyear prospect was explored by a 300-foot-long adit and at least one open cut by 1923 (Moffit and Mertie, 1923). The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliott Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east

(MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The Goodyear prospect was explored by a 300-foot-long adit and at least one open cut by 1923 (Moffit and Mertie, 1923).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Mendenhall and Schrader, 1903; Moffit and Maddren, 1908; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Louise

Site type: Prospect

ARDF no.: VA031

Latitude: 61.6471 **Quadrangle:** VA C-1

Longitude: 144.1001

Location description and accuracy:

This prospect is near Rainbow Creek on the north side of Elliott Creek valley (Moffit and Maddren, 1909, p. 64); it is at an elevation of about 4,100 feet in the SW1/4 section 35, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is included in locality 65 Cobb and Matson (1972) and locality 55 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag

Ore minerals: Bornite, chalcopyrite

Gangue minerals: Calcite

Geologic description:

Bornite and chalcopyrite occur in calcite veins as much as 2 inches thick in irregularly fractured Triassic Nikolai Greenstone (Mendenhall and Schrader, 1903; Moffit and Mertie, 1923). A composite high-grade sample was reported to contain 25 percent copper (Mendenhall and Schrader, 1903). The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliott Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was explored with open cuts, some as early as 1902 (Mendenhall and Schrader, 1903).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Mendenhall and Schrader, 1903; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Henry Prather

Site type: Prospect

ARDF no.: VA032

Latitude: 61.6477 **Quadrangle:** VA C-1

Longitude: 144.0998

Location description and accuracy:

This prospect is near Rainbow Creek on the north side of Elliott Creek valley (Moffit and Maddren, 1909, p. 64); it is at an elevation of about 4,100 feet in the SW1/4 section 35, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is included in locality 65 Cobb and Matson (1972) and locality 55 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyrite

Gangue minerals: Calcite, quartz

Geologic description:

Triassic Nikolai Greenstone hosts lenticular, fault-bounded bodies that contain bornite and chalcopyrite (Mendenhall and Schrader, 1903; Moffit and Mertie, 1923). Individual sulfide-bearing bodies can be 5 feet wide and 30 feet long. At this site, a later cross-cutting calcite vein, 8 to 12 inches wide, also contains bornite and chalcopyrite. The lenticular mineralization at the Henry Prather prospect may be a faulted segment of the sulfide-bearing body at the Goodyear prospect (VA030). The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliott Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Juras-

sic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Open cuts were used to explore this prospect.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Mendenhall and Schrader, 1903; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Elizabeth

Site type: Prospect

ARDF no.: VA033

Latitude: 61.6476 **Quadrangle:** VA C-1

Longitude: 144.0999

Location description and accuracy:

This prospect is near Rainbow Creek on the north side of Elliott Creek (Moffit and Mertie, 1923, locality 20, plate 3); it is at an elevation of about 4,100 feet in the SW1/4 section 35, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is included in locality 65 of Cobb and Matson (1972) and locality 55 of Winklerand others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) incuded this prospect under the name 'Elliot Cr.'.

Commodities:

Main: Cu

Other: Ag

Ore minerals: Azurite, bornite, chalcopyrite, malachite

Gangue minerals: Calcite, quartz

Geologic description:

Small veins, lenses, and impregnations of bornite and chalcocite occur in fractured Triassic Nikolai Greenstone (Moffit and Maddren, 1908, 1909; Moffit and Mertie, 1923) . Locally present gangue minerals are commonly quartz and calcite; secondary copper minerals include malachite and azurite. A grab sample of ore from this prospect contained 21.69 percent copper and 1.87 ounces of silver per ton (Mendenhall and Schrader, 1903, p. 26). Post-mineralization faulting has fractured the deposits. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliot Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east

(MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:

Thin veins, impregnations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:

This prospect has been explored by a combination of open cuts, an adit ,and drifts. About 475 feet of underground workings were in place in 1908 (Moffit, 1909).

Production notes:

Reserves:

Additional comments:

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

References:

Mendenhall and Schrader, 1903; Moffit and Maddren, 1908; Moffit and Maddren, 1909; Moffit, 1909; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); MacKevett and others, 1997.

Primary reference: Moffit and Maddren, 1908

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Albert Johnson

Site type: Prospect

ARDF no.: VA034

Latitude: 61.6532 **Quadrangle:** VA C-1

Longitude: 144.1263

Location description and accuracy:

This prospect is located east of Deception Creek on the north side of Elliott Creek; it is at an elevation of about 4,100 feet in the NW1/4 section 34, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is included in locality 64 of Cobb and Matson (1972) and locality 54 of Winkler and others (1981 [OFR 80-892-B]). Moffit and Mertie (1923) show this prospect as locality 19 on their plate 3. Cobb (1979 [OFR 79-1241]) incuded it under the name 'Elliot Cr.'.

Commodities:

Main: Cu

Other: Ag

Ore minerals: Bornite, chalcopyrite, native copper

Gangue minerals: Calcite, epidote, quartz

Geologic description:

Bornite, chalcopyrite, and some native copper occur in small, sheeted veins and replacement deposits in fractured Triassic Nikolai Greenstone (Moffit, 1918, p. 156-157). By 1916, the deposit had been explored by two adits, one 1,076 feet long, and smaller cross cuts. The gangue minerals are commonly quartz, calcite and epidote. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliot Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is probably related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
By 1916, the deposit had been explored by two adits, one 1,076 feet long, and smaller cross cuts (Moffit, 1918).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit, 1918; Moffit and Mertie, 1923; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981(OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit, 1918

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Guthrie

Site type: Prospect

ARDF no.: VA035

Latitude: 61.6531 **Quadrangle:** VA C-1

Longitude: 144.1263

Location description and accuracy:

This prospect is located east of Deception Creek and north of Elliott Creek; it is at an elevation of about 4,100 feet in the NW1/4 section 34, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is included in locality 64 of Cobb and Matson (1972) and locality 54 of Winkler and others (1981). It is immediately northeast and adjacent to the Albert Johnson claim (VA034).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

Triassic Nikolai Greenstone is shattered and cut by small veinlets containing bornite and chalcopyrite (Moffit and Mertie, 1923). At the adjacent Albert Johnson prospect (VA034), bornite, chalcopyrite, and some native copper occur in small sheeted veins and replacement deposits in fractured Triassic Nikolai Greenstone (Moffit, 1918, p. 156-157). Gangue minerals in the veins are commonly calcite, epidote, and quartz. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliott Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Juras-

sic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was explored with an adit and probably some open cuts.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Mertie, 1923; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mountain Boy; Montana Boy

Site type: Prospect

ARDF no.: VA036

Latitude: 61.6590 **Quadrangle:** VA C-1

Longitude: 144.0246

Location description and accuracy:

This prospect is located on the west side of the upper valley of East Fork Copper Creek (Van Alstine and Black, 1946, plate 30); it is at an elevation of 4,700 feet in the SE1/4 section 30, T. 2 S., R. 8 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-quarter mile. It is included in locality 72 of Cobb and Matson (1972) and locality 58 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag?, Au?

Ore minerals: Bornite, chalcocite, chalcopyrite, gold?

Gangue minerals: Quartz?

Geologic description:

Vertical veins, the largest a few inches thick, and irregular pods of bornite and chalcopyrite occur in Triassic Nikolai Greenstone at this locality (Van Alstine and Black, 1946, p. 131). Malachite coatings are present in nearby fractures. Moffit and Mertie (1923, p. 103) noted that free gold was reported to have been panned from an iron-stained quartz vein in this area. A 10-foot-long adit and several open cuts explored the prospect, which is about 150 feet below the base of overlying Triassic Chitistone Limestone. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p.

88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
A 10-foot-long adit and several open cuts explored the prospect (Van Alstine and Black, 1946).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Forget-Me-Not

Site type: Prospect

ARDF no.: VA037

Latitude: 61.6617 **Quadrangle:** VA C-1

Longitude: 144.0394

Location description and accuracy:

This prospect is on the east side of the upper valley of the Middle Fork Copper Creek (Val Alstine and Black, 1946, plate 30); it is at an elevation of about 4,700 feet in the SW1/4 section 30, T. 2 S., R. 8 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-quarter mile. It is included in locality 72 of Cobb and Matson (1972) and locality 58 of Winkler and others (1981[OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, malchite, pyrite

Gangue minerals:

Geologic description:

An open cut in Triassic Nikolai Greenstone exposed an irregular fractured zone that contains desiminated pyrite and some bornite (Moffit and Mertie, 1923; Van Alstine and Black, 1946). Malachite coats fractures in the zone. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:

Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-

type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was explored with at least one open cut (Van Alstine and Black, 1946).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Blue Bird

Site type: Prospect

ARDF no.: VA038

Latitude: 61.6617 **Quadrangle:** VA C-1

Longitude: 144.0308

Location description and accuracy:

This prospect is on the crest of the divide between the upper Middle Fork and East Fork Copper Creek (Val Alstine and Black, 1946, plate 30); it is at an elevation of about 5,300 feet nearly in the center of the S1/2 section 30, T. 2 S., R. 8 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-quarter mile. It is included in locality 72 of Cobb and Matson (1972) and locality 58 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au, Cu

Other:

Ore minerals: Bornite, chalcocite, chalcopyrite, covellite, enargite, malachite

Gangue minerals: Calcite, epidote

Geologic description:

Triassic Nikolai Greenstone is cut by shear zones that contain calcite-epidote veinlets and small amounts of pyrite, bornite, and enargite. These sulfides are also disseminated in small grains (Van Alstine and Black, 1946). This prospect was explored by two open cuts, and about 100 pounds of hand-sorted bornite and enargite were left near each cut. A polished section of this material showed covellite inclusions in enargite. Chalcocite occurs on the borders of bornite grains, as veinlets in bornite, and as irregular patches replacing bornite (Van Alstine and Black, 1946). The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Juras-

sic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Van Alstine and Black (1946) reported that two open cuts explored this prospect.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Van Alstine and Black, 1946; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Leland; Lawton; Hubbard and Elliotts

Site type: Prospect

ARDF no.: VA039

Latitude: 61.6652 **Quadrangle:** VA C-1

Longitude: 144.1248

Location description and accuracy:

These prospects are on the saddle between the heads of Five Sheep and Deception Creeks (Moffit and Maddren, 1909, p. 64); it is at an elevation of about 5,000 feet in the SW1/4 section 27, T. 2 S., R. 7 E., of the Copper River Meridian. These prospects are approximately located, probably to within one-quarter mile. They are included in locality 63 of Cobb and Matson (1972) and included in locality 54 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) incuded these prospects under the name 'Elliot Cr.'.

Commodities:

Main: Cu

Other: Ag

Ore minerals: Azurite, bornite, chalcanthite, chalcocite, chalcopyrite, malachite, pyrite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

Thin veins, films, and disseminations of bornite, chalcocite, and pyrite cut Triassic Nikolai Greenstone in this area (Moffit and Maddren, 1908, 1909; Moffit and Mertie, 1923). The gangue minerals are commonly quartz, calcite and epidote; secondary copper minerals include malachite, azurite, and some chalcanthite. Some mineralization occurs as irregular pods in greenstone. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliot Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east

(MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Some small open cuts are probably present.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Maddren, 1908; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mountain Sheep

Site type: Prospect

ARDF no.: VA040

Latitude: 61.6666 **Quadrangle:** VA C-1

Longitude: 144.0573

Location description and accuracy:

This prospect is located near the crest of the divide between upper Copper Creek and Middle Fork Copper Creek (Van Alstine and Black, 1946, plate 30). It is at an elevation of 5,000 feet in the NE1/4 section 25, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is locality 71 of Cobb and Matson (1972) and locality 57 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) includes this prospect under the name Mountain Sheep.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, bornite, chalcopyrite, limonite, malachite, pyrite

Gangue minerals:

Geologic description:

The Mountain Sheep prospect is in Triassic Nikolai Greenstone about 60 feet below its contact with the overlying Triassic Chitistone Limestone (Van Alstine and Black, 1946, p. 130). Disseminated pyrite, bornite, and a little chalcopyrite occur in shattered greenstone. About 1 percent bornite occurs in fractured zones as much as one inch thick. Limonite, malachite, and some azurite locally stain the greenstone. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p.

88).

Deposit model:
Vein and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored before 1923 by small open cuts and a 20-foot adit driven before 1923.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Van Alstine and Black, 1946; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Bunker Hill

Site type: Prospect

ARDF no.: VA041

Latitude: 61.6638 **Quadrangle:** VA C-1

Longitude: 144.0184

Location description and accuracy:

This prospect is on the east side of the upper valley of East Fork Copper Creek; it is at an elevation of 5,000 feet on the east boundary of section 30, T. 2 S., R. 8 E., of the Copper River Meridian. This prospect is approximately located, perhaps to about one-quarter mile. It is locality 73 of Cobb and Matson (1972) and is included in locality 58 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, bornite, chalcopyrite, covellite, malachite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

A 25-foot-thick section of Triassic Chitistone Limestone overthrust by Triassic Nikolai Greenstone is locally cut by thin veins and veinlets containing quartz, calcite, and copper-bearing minerals (Van Alstine and Black, 1946, p. 131-132). A veinlet as much as 1 inch thick in limestone contains malchite, azurite, some bornite, chalcopyrite, calcite, and epidote. A 15-foot adit was driven along the thin veinlet in limestone. About 100 feet above the adit, a fractured zone in greenstone that structurally overlies the limestone contains several veinlets of quartz, calcite, malachite, azurite, epidote, some chalcopyrite, bornite, and covellite. This fractured zone is 6 inches to 3 feet thick, trends S30E, and dips 75 degrees southwest; it may be continuous with the mineralized zone exposed in the adit below it. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in limestone and greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
A 15-foot-long adit was driven on a thin vein in limestone. A small open cut exposed the mineralized shear zone in overlying greenstone (Van Alstine and Black , 1946).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Van Alstine and Black, 1946; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Peacock

Site type: Prospect

ARDF no.: VA042

Latitude: 61.6705 **Quadrangle:** VA C-1

Longitude: 144.0629

Location description and accuracy:

This prospect is on the east side of upper Copper Creek (Van Alstine and Black, 1946, plate 30); it is at an elevation of about 4,100 feet in the NW1/4 section 25, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is included in locality 70 of Cobb and Matson (1972) and locality 57 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) includes this prospect under the name 'Peacock'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, bornite, chalcocite, malachite, pyrite

Gangue minerals: Calcite, epidote

Geologic description:

Triassic Nikolai Greenstone contains small, scattered grains and veinlets of bornite, chalcocite, and pyrite; secondary minerals include azurite and malachite (Van Alstine and Black, 1946, p. 130). The veinlets are as much as one inch thick in a 40-foot-long adit. Brecciated greenstone on the surface above the adit is cemented with calcite, epidote, and bornite. Individual calcite-bornite seams in the breccia are as much as 2 inches thick. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Calcite and epidote veining and breccia-filling in greenstone.

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Juras-

sic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Vein and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was explored with an adit that was caved 40 feet from the portal in 1943 (Van Alstine and Black, 1946).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Van Alstine and Black, 1946; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Cave

Site type: Prospect

ARDF no.: VA043

Latitude: 61.6716 **Quadrangle:** VA C-1

Longitude: 144.0688

Location description and accuracy:

This prospect is on the west side of upper Copper Creek (Van Alstine and Black, 1946, plate 30); it is at an elevation of about 4,100 feet in the NW1/4 section 25, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is included in locality 70 of Cobb and Matson (1972) and locality 57 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) includes this prospect under the name 'Cave'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, bornite, chalcopyrite, malachite

Gangue minerals: Quartz

Geologic description:

A 223-foot-long adit explores this copper prospect in Triassic Nikolai Greenstone (Van Alstine and Black, 1946, p. 129-130). The only mineralization exposed in the adit is a 2- to 12-inch-thick shear zone that contains quartz, bornite, malachite, and some chalcopyrite. The shear zone is located 23 feet in from the portal, trends N 14 W, and dips 7 degrees west. Other shear zones with quatz and calcite were exposed in the adit, but they did not contain copper mineralization. The prospect is only about 30 feet below the contact with overlying Triassic Chitistone Limestone; azurite and malchite films coat some fractures in the nearby limestone. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east

(MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Vein and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
A 223-foot-long adit explores this copper prospect in Triassic Nikolai Greenstone (Van Alstine and Black, 1946, p. 129-130).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Van Alstine and Black, 1946; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mullen

Site type: Prospect

ARDF no.: VA044

Latitude: 61.6783 **Quadrangle:** VA C-1

Longitude: 144.0671

Location description and accuracy:

This prospect is adjacent to or very near the Ammann prospect (VA045), which is on the divide between upper Copper Creek and an unnamed (unmapped) west tributary (Van Alstine and Black, 1946, plate 30). The prospect is at an elevation of about 3,800 feet in the SW1/4 section 24, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is included in locality 70 of Cobb and Matson (1972) and locality 57 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) includes this prospect under the name 'Mullen'.

Commodities:

Main: Cu

Other: Ag, Au

Ore minerals: Azurite, bornite, chalcocite, chalcopyrite, covellite, limonite, malachite, pyrite

Gangue minerals: Calcite, quartz

Geologic description:

Mineralized northeast-trending fault zones cut Triassic Nikolai Greenstone and Chitistone Limestone at the Mullen prospect (Van Alstine and Black, 1946). Mineralization consists of calcite or quartz-calcite veins with copper-bearing minerals. The mineralized veins contain various amounts of bornite, chalcocite, chalcopyrite, covellite, and pyrite; secondary minerals include azurite, malachite, and limonite. In places, the copper-bearing minerals form small irrgeular pods in the fault zones. The veins range from 1 to 12 inches in thickness and have been traced in underground workings for as much as a few tens of feet of strike length. A 5-foot channel sample contained 1.55 percent copper, and a 4-foot channel sample contained 5.82 percent copper, 0.28 ounces of silver per ton, and a trace of gold. The underground workings at the Mullen prospect consisted of two adits, short cross cuts and drifts, and two declines that have a total length of at least 800 feet (Van Alstine and Black, 1946). Small, altered diorite intrusive bodies are present at the contact between Nikolai Greenstone and Chitistone Limestone. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott

copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

The diorite bodies are altered to a combination of chlorite, calcite, talc, leucoxene, quartz and pyrite (Van Alstine and Black, 1946).

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:

Vein and fracture fillings in greenstone and limestone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:

The Mullen prospect was explored by three open cuts, two adits, short cross cuts and drifts, and two declines that have a total length of at least 800 feet (Van Alstine and Black, 1946).

Production notes:

Reserves:

Additional comments:

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

References:

Van Alstine and Black, 1946; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Ammann

Site type: Prospect

ARDF no.: VA045

Latitude: 61.6782 **Quadrangle:** VA C-1

Longitude: 144.0671

Location description and accuracy:

This prospect is on the divide between upper Copper Creek and an unnamed west tributary (not mapped on the C-1 quadrangle). The map site is at an elevation of 3,800 feet in the SW1/4 section 24, T. 2 S., R. 7 E., of the Copper River Meridian; it is accurately located. This prospect is adjacent to or very near the Mullen prospect (VA044) (Van Alstine and Black, 1946, plate 30). It is locality 70 of Cobb and Matson (1972) and Cobb (1979 [OFR 79-1241]) and locality 57 of Winkler and others (1981[OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, bornite, chalcopyrite, chalcocite, covellite, malachite, pyrite

Gangue minerals: Calcite, quartz

Geologic description:

This copper prospect is in Triassic Chitistone limestone. This prospect was explored by two adits. The upper adit was driven S5E for 25 feet. The lower adit was driven S32W for 473 feet from the portal; there it turned and was driven 111 feet S17E (Van Alstine and Black, 1946, p. 125). At the portal and at the face of the lower adit, the limestone is cut by a few irregular veinlets less than one-quarter inch thick of malachite, azurite, and calcite (Van Alstine and Black, 1946, p. 125-126). No copper minerals are present in the upper, 25-foot-long adit, but a small, discontinuous breccia zone, 2 to 6 inches thick and 25 feet above the upper adit, contains quartz, pyrite, bornite, chalcopyrite, chalcocite, covellite, malachite, and azurite. The breccia zone strikes east-west and dips about 45 degrees south. This prospect is near the contact between Chitistone Limestone and Triassic Nikolai Greenstone. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to be related to Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:

Vein and fracture fillings in limestone; Kennecott-type copper deposit (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:

This prospect was explored by two adits. The upper adit was driven S5E for 25 feet. The lower adit was driven S32W for 473 feet from the portal, where it turned and was driven 111 feet S17E (Van Alstine and Black, 1946, p. 125).

Production notes:

Reserves:

Additional comments:

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

References:

Van Alstine and Black, 1946; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981(OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Copper Creek

Site type: Prospect

ARDF no.: VA046

Latitude: 61.7013 **Quadrangle:** VA C-1

Longitude: 144.0631

Location description and accuracy:

This prospect is located on lower Copper Creek, about 2,000 feet upstream of its mouth on the Kotsina River. The map site is at an elevation of about 2,250 feet in the S1/2 section 12, T. 2 S., R. 7 E., of the Copper River Meridian. The prospect is approximately located, to about one-half mile. It is locality 110 of Winkler, Miller, and others (1981[OFR 80-892-B]).

Commodities:

Main: Au?

Other: Cu?

Ore minerals: Gold?

Gangue minerals:

Geologic description:

Placer and lode claims are reported along Copper Creek (U.S. Bureau of Mines 1980; Winkler, Miller, and others, 1981[OFR 80-892-B]). Several prospects (for example, VA040, VA042, VA043, VA044, and VA045) in the headwaters of Copper Creek are located in proximity to the contact between Triassic Nikolai Greenstone and overlying carbonate rocks (Winkler and others, 1981[OFR 80-892-A]). The nature of the placers or lodes in lower Copper Creek is not known.

Alteration:

Age of mineralization:

Holocene placers.

Deposit model:

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

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

39a?

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface prospecting has probably taken place along Copper Creek.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Marmot

Site type: Prospect

ARDF no.: VA047

Latitude: 61.6453 **Quadrangle:** VA C-1

Longitude: 144.0779

Location description and accuracy:

This prospect is between Castle and Pouch Creeks on the north side of Elliott Creek; it is at an elevation of about 4,500 feet in the SE1/4 section 35, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. It is locality 67 of of Cobb and Matson (1972).

Commodities:

Main: Cu

Other: Ag

Ore minerals: Azurite, bornite, chalcocite, chalcopyrite, malachite, pyrite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

Thin veins, films, and disseminations of bornite, chalcocite, and pyrite cut Triassic Nikolai Greenstone in this area (Moffit and Maddren, 1908, 1909; Moffit and Mertie, 1923). Gangue minerals are commonly quartz, calcite, and epidote; secondary copper minerals include malachite and azurite. Some mineralization occurs as irregular pods in greenstone. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliott Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was probably explored by small open cuts.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Maddren, 1908; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Copper Queen

Site type: Prospect

ARDF no.: VA048

Latitude: 61.6407 **Quadrangle:** VA C-1

Longitude: 144.0669

Location description and accuracy:

This prospect is located between Pouch and Kings Creeks on the north side of Elliott Creek; it is at an elevation of 4,400 feet in the NW1/4 section 1, T. 3 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, probably to within about one-half mile. It is locality 68 of Cobb and Matson (1972) and included in locality 56 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) incuded this prospect under the name 'Elliot Cr.'.

Commodities:

Main: Cu

Other: Ag, Au

Ore minerals: Azuite, bornite, chalcanthite, chalcocite, malachite, pyrite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

Thin veins, films, and disseminations of bornite, chalcocite, and pyrite cut Triassic Nikolai Greenstone in this area (Moffit and Maddren, 1908, 1909; Moffit and Mertie, 1923). Gangue minerals are commonly quartz, calcite, and epidote; secondary copper minerals include malachite, azurite, and some chalcanthite. Some mineralization occurs as irregular pods in greenstone. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliot Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Juras-

sic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Prospects in the Elliot Creek area were mostly explored with small open cuts (Moffit and Mertie, 1923).

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Maddren, 1908; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (south of Elliott Creek)

Site type: Prospect

ARDF no.: VA049

Latitude: 61.6397 **Quadrangle:** VA C-1

Longitude: 144.0921

Location description and accuracy:

This prospect is located on the south side of Elliott Creek (Moffit and Mertie, 1923, p. 146); it is at an elevation of 4,400 feet in the NW1/4 section 2, T. 3 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-half mile. It is locality 66 of Cobb and Matson (1972) and included under the name 'Elliot Cr.' by Cobb (1979 [OFR 79-1241]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Calcite, quartz

Geologic description:

This prospect is on a small quartz-calcite vein along a fault in Triassic Nikolai Greenstone (Moffit and Mertie, 1923, p. 146). A little gold is reported to be present.

Alteration:

Age of mineralization:

Quartz-calcite veining in this area is probably related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east. This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:

Quatz-calcite vein in greenstone

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Some small open cuts are probably present.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Mertie, 1923; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Chance

Site type: Prospect

ARDF no.: VA050

Latitude: 61.6712 **Quadrangle:** VA C-1

Longitude: 144.1628

Location description and accuracy:

This prospect is on the divide between Five Sheep and Magpie Creeks on the north side of the valley of Elliott Creek; it is at an elevation of 4,500 feet near the northwest corner of section 28, T. 2 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 62 of Cobb and Matson (1972) and locality 53 of Winkler and others (1981 [OFR 80-892-B]). Cobb (1979 [OFR 79-1241]) incuded this prospect under the name 'Elliot Cr.'.

Commodities:

Main: Cu

Other: Ag

Ore minerals: Azurite, bornite, chalcopyrite, malachite

Gangue minerals: Calcite, quartz

Geologic description:

Thin veins, films, and disseminations of bornite, chalcocite, and pyrite cut Triassic Nikolai Greenstone in this area (Moffit and Maddren, 1908 and 1909; Moffit and Mertie, 1923). The gangue minerals are commonly quartz, calcite, and epidote; secondary copper minerals include malachite, azurite, and some chalcanthite. Some mineralization occurs as irregular pods in greenstone. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliot Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits to the east in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Juras-

sic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Some small open cuts are probably present.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
Moffit and Maddren, 1908; Moffit and Maddren, 1909; Moffit and Mertie, 1923; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Iron Creek)

Site type: Prospect

ARDF no.: VA051

Latitude: 61.5999 **Quadrangle:** VA C-1

Longitude: 144.1272

Location description and accuracy:

This prospect is located about a quarter of a mile northeast of a small elongate lake on the west side of an unnamed north tributary to Iron Creek; it is 3.4 miles southwest of the summit of Iron Mountain at an elevation of 2,100 feet in the NW1/4 section 22, T. 3 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-half mile. It is locality 108 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals:

Gangue minerals:

Geologic description:

Lode claims were patented in 1916 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Country rocks are metamorphic rocks of the Paleozoic Skolai Group; the prospect may be gold-bearing veins similar to those at the Canning prospect (VA026). The Skolai Group is locally intruded by mafic to intermediate Jurassic plutons in this area. The mineralization probably postdates the Paleozoic Skolai Group and may postdate the Late Jurassic or Early Cretaceous deformation and metamorphism in the region (Winkler and others, 1981 [OFR 80-892-A]; MacKevett and others, 1997).

Alteration:

Age of mineralization:

The mineralization probably postdates the Paleozoic Skolai Group and may postdate the Late Jurassic or Early Cretaceous deformation and metamorphism in the region (Winkler and others, 1981 [OFR 80-892-A]; MacKevett and others, 1997).

Deposit model:

Polymetallic veins? (Cox and Singer, 1986; model 22c)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c?

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Some small open cuts are probably present.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Benito Creek and Lorraine Creek)

Site type: Prospect

ARDF no.: VA052

Latitude: 61.6256 **Quadrangle:** VA C-1

Longitude: 144.1266

Location description and accuracy:

This prospect is located on the divide between upper Benito Creek and an unamed drainage to the east; it is at an elevation of about 4,000 feet in the NW1/4 section 10, T. 3 S., R. 7 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-half mile. It is locality 109 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Lode claims were staked in this area in 1913 and 1979 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Country rocks at this locality are metamorphic rocks of the Paleozoic Skolai Group, and the deposit may be gold-bearing veins similar to those at the Canning prospect (VA026). The Skolai Group is locally intruded by mafic to intermediate Jurassic plutons in this area. The mineralization probably postdates the Paleozoic Skolai Group and may postdate the Late Jurassic or Early Cretaceous deformation and metamorphism in the region (Winkler and others, 1981 [OFR 80-892-A]; MacKevett and others 1997).

Alteration:

Age of mineralization:

The mineralization probably postdates the Paleozoic Skolai Group and may postdate the Late Jurassic or Early Cretaceous deformation and metamorphism in the region (Winkler and others, 1981 [OFR 80-892-A]; MacKevett and others, 1997).

Deposit model:

Polymetallic veins? (Cox and Singer, 1986; model 22c)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
22c?

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
This prospect was probably explored by open cuts.

Production notes:

Reserves:

Additional comments:
This prospect is within the Wrangell-St. Elias National Park.

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Cliff; Fog

Site type: Prospects

ARDF no.: VA053

Latitude: 61.6532 **Quadrangle:** VA C-1

Longitude: 144.1263

Location description and accuracy:

These prospects are located east of Deception Creek on the north side of Elliott Creek valley; they are at an elevation of about 4,100 feet in the NW1/4 section 34, T. 2 S., R. 7 E., of the Copper River Meridian. The prospects are approximately located, perhaps to within one-half mile. They are incuded in locality 64 of Cobb and Matson (1972) and locality 54 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag

Ore minerals: Azurite, bornite, chalcocite, chalcopyrite, malachite, pyrite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

These prospects are near the Albert Johnson prospect (VA034) north of the headwaters of Elliott Creek. At the Albert Johnson prospect, bornite, chalcopyrite, and some native copper occur in small sheeted veins and replacement deposits in fractured Triassic Nikolai Greenstone (Mendenhall and Schrader, 1903; Moffit, 1918, p. 156-157). In general, thin veins, films and disseminations of bornite, chalcocite, and pyrite cut Triassic Nikolai Greenstone in this area (Moffit and Maddren, 1908 ,1909; Moffit and Mertie, 1923). Gangue minerals are commonly quartz, calcite, and epidote; secondary copper minerals include malachite, azurite and some chalcanthite. Some mineralization occurs as irregular pods in greenstone. The Nikolai Greenstone and overlying Chitistone Limestone are deformed into a large, asymmetric anticline with its axis approximately parallel to Elliott Creek. The copper mineralization is believed to be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization is believed to be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others 1997, p. 88).

Deposit model:

Veins, disseminations, and fracture fillings in greenstone; probably related to Kennecott-type copper deposits (MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:

These prospects were mostly explored with open cuts (Moffit and Mertie, 1923).

Production notes:

Reserves:

Additional comments:

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

References:

Mendenhall and Schrader, 1903; Moffit and Maddren, 1908; Moffit and Maddren, 1909; Moffit, 1918; Moffit and Mertie, 1923; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Quitsch

Site type: Prospect

ARDF no.: VA054

Latitude: 61.2676 **Quadrangle:** VA B-7

Longitude: 146.3103

Location description and accuracy:

This prospect is on the steep, southeast-facing bedrock slope on the south side of Mineral Creek Glacier; it is at an elevation of about 3,300 feet near the north boundary of section 16, T. 7 S., R. 6 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 21 of Cobb and Matson (1972) and locality 18 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A quartz vein containing pyrite, galena, and free gold cuts metagraywacke of the Valdez Group at this prospect (Johnson, 1915). This vein is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:
Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
This prospect was explored with a 12-foot-long adit in 1914 (Johnson, 1915).

Production notes:

Reserves:

Additional comments:

References:
Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near foot of Tsina Glacier)

Site type: Occurrence

ARDF no.: VA055

Latitude: 61.2544 **Quadrangle:** VA B-5

Longitude: 145.8026

Location description and accuracy:

This occurrence is on the south side of the foot of Tsina Glacier. It is near the center of the south border of section 17, T. 7 S., R. 3 W., of the Copper River Meridian. This occurrence is probably located to within one-quarter mile. It is locality 79 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag, Pb, Zn

Ore minerals: Chalcopyrite, galena, pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

Iron-stained lenses and quartz veins in mafic metavolcanic rocks of the Late Cretaceous Valdez Group contain pyrite, chalcopyrite, galena, and sphalerite (Winkler and others, 1981 [OFR 80-892-B]). The sulfide minerals are disseminated in the mafic metavolcanic rocks and in the quartz veins. The metavolcanic rocks probably represent ocean floor basalts that were accreted with the flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Oxidation; mineralized zones are iron stained.

Age of mineralization:

Late Cretaceous; the host metavolcanic rocks probably represent ocean floor basalts that were accreted with the flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
24a

Production Status: None

Site Status: Inactive

Workings/exploration:
Only reconnaissance surface examination.

Production notes:

Reserves:

Additional comments:

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed

Site type: Prospect

ARDF no.: VA056

Latitude: 61.4322 **Quadrangle:** VA B-5

Longitude: 145.5076

Location description and accuracy:

This prospect is on the south side of lower Hurtle Creek, about 1 mile southeast of the mouth of Hurtle Creek on Tonsina Lake. It is at an elevation of about 2,400 feet in the SW1/4 section 13, T. 5 S., R. 2 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 95 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Lode gold claims were staked here and were active from 1953 to 1972 (U.S. Bureau of Mines, 1980; Winklerand others, 1981 [OFR 80-892-B]). These deposits are probably gold-bearing quartz veins cutting metaflysch of the Valdez Group and similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-froming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:
Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:
At least some surface prospecting has occurred at this prospect.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Reis

Site type: Prospect

ARDF no.: VA057

Latitude: 61.2783 **Quadrangle:** VA B-4

Longitude: 145.2806

Location description and accuracy:

This prospect is on the west side of the Tiekel River about 1.4 miles north of the mouth of Stuart Creek. It is at an elevation of about 1,250 feet in the NW1/4 section 8, T. 7 S., R. 1 E., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 47 of Cobb and Matson (1972) and locality 39 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Small, gold-bearing quartz veins cut metaflysch of the Valdez Group at this prospect; the metaflysch is locally cut by felsic dikes (Moffit, 1918). These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Only small-scale surface prospecting.

Production notes:

Reserves:

Additional comments:

References:

Moffit, 1918; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: This report

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Portland

Site type: Prospect

ARDF no.: VA058

Latitude: 61.2980 **Quadrangle:** VA B-4

Longitude: 145.3121

Location description and accuracy:

This prospect is on the west side of Tiekel River valley, about 1.1 mile southeast of Mount Tiekel. The map site is near the southeast corner of section 36, T. 6 S., R. 1 W., of the Copper River Meridian. This prospect is approximately located, perhaps to within 1 mile. It is locality 46 of Cobb and Matson (1972) and locality 38 of Winkler, Miller, and others (1981).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Small, gold-bearing quartz veins cut metaflysch of the Valdez Group at this prospect; the metaflysch is locally cut by felsic dikes (Moffit, 1918). These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Only small-scale surface prospecting.

Production notes:

Reserves:

Additional comments:

References:

Moffit, 1918; Cobb and Matson, 1972; Winkler and others, 1981(OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: This report

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Knowles; Knowles and Backman Property

Site type: Prospect

ARDF no.: VA059

Latitude: 61.3108 **Quadrangle:** VA B-4

Longitude: 145.4392

Location description and accuracy:

This prospect is on the north side of upper Mill Creek; the claims extended over the ridge to the north into the headwaters of Glacier Creek (Moffit, 1935, plate 1). It is at an elevation of about 4,800 feet in the NE1/4 section 32, T. 6 S., R. 1 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 43 of Cobb and Matson (1972) and locality 35 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, limonite?, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing, partly oxidized, lenticular quartz veins with arsenopyrite and galena cut metaflysch of the Valdez Group at this prospect; the metaflysch is locally cut by felsic dikes (Moffit, 1935). The veins are as much as 14 inches wide and dip 85 degrees east; they trend northerly, but other sheared quartz masses and veins along faults have different orientations. These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

This prospect was explored with open cuts.

Production notes:

Reserves:

Additional comments:

References:

Moffit, 1935; Cobb and Matson, 1972.

Primary reference: Moffit, 1935

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Eagle; Ellis; American Eagle

Site type: Mine

ARDF no.: VA060

Latitude: 61.3157 **Quadrangle:** VA B-4

Longitude: 145.4047

Location description and accuracy:

This mine is on the east side of the cirque at the head of Boulder Creek (Moffit, 1935, plate 1). The map site is 2.1 miles northwest of Mount Tiekel at an elevation of about 4,500 feet in the SE1/4 section 28, T. 6 S., R. 1 W., of the Copper River Meridian. This mine is probably located to within one-half mile. It is locality 44 of Cobb and Matson (1972) and locality 36 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, limonite?, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Oxidized, gold-bearing quartz veins with arsenopyrite and galena cut metaflysch of the Valdez Group at this mine; the metaflysch is locally cut by felsic dikes (Moffit, 1918). The veins, varying from 1 to 6 feet thick, and felsic dikes trend N20W parallel to a prominent joint set. An open cut and adit with about 125 feet of underground workings developed this mine. A small mill was installed in 1918; oxidized ore was amalgamated in an arrastre on site or shipped to the Cliff mine (VA107) for milling. Moffit (1935) estimated that $10,000 to $20,000 worth of gold (500 to 1,000 ounces) were produced.

These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and

partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

An open cut and adit with about 125 feet of underground workings developed this mine. A small mill was installed in 1918; oxidized ore was amalgamated in an arrastre on site or shipped to the Cliff mine (VA107) for milling.

Production notes:

Moffit (1935) estimated that $10,000 to $20,000 worth of gold (500 to 1,000 ounces) were produced.

Reserves:

Additional comments:

References:

Moffit, 1918; Moffit, 1935; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Moffit, 1935

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Ross

Site type: Prospect

ARDF no.: VA061

Latitude: 61.3190 **Quadrangle:** VA B-4

Longitude: 145.3516

Location description and accuracy:

This prospect is one mile north of Mount Tiekel on the ridge between the south fork of Boulder Creek and the Tiekel River. It is at an elvation of about 4,850 feet in the SE1/4 section 26, T. 6 S., R. 1 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 45 of Cobb and Matson (1972) and locality 37 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing quartz veins with arsenopyrite and galena cut metaflysch of the Valdez Group at this prospect; the metaflysch is locally cut by felsic dikes (Moffit, 1918). These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:
Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:
A 200-foot adit was driven on this prospect (Moffit, 1918).

Production notes:
It is not known if gold was produced from this deposit. It is possible that a small amount of gold was recovered because some small high-grade zones were reported (Moffit, 1918).

Reserves:

Additional comments:

References:
Moffit, 1918; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Moffit, 1918

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near mouth of Stuart Creek)

Site type: Occurrence

ARDF no.: VA062

Latitude: 61.2617 **Quadrangle:** VA B-4

Longitude: 145.2883

Location description and accuracy:

This occurrence is on Stuart Creek near its mouth on the Tsina River. The map site is about one-quarter mile upstream from the mouth at an elevation of about 1,200 feet. It is in the center of the east half of section 18, T. 7 S., R. 1 E., of the Copper River Meridian. This occurrence is probably located to within one-quarter mile. It is locality 84 of Cobb and Matson (1972).

Commodities:

Main: Au, W

Other:

Ore minerals: Gold, scheelite

Gangue minerals:

Geologic description:

Gold and scheelite have been identified in stream gravels at this location (Jasper, 1967). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:

Holocene.

Deposit model:

Gold and scheelite in stream gravels (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:
Only reconnaissance sampling.

Production notes:

Reserves:

Additional comments:

References:
Jasper, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Jasper, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Boulder Creek

Site type: Mine

ARDF no.: VA063

Latitude: 61.3332 **Quadrangle:** VA B-4

Longitude: 145.3496

Location description and accuracy:
This occurrence is on Boulder Creek, about 1.4 miles upstream from its mouth on the Tiekel River. It is on the creek at an elevation of about 2,400 feet in the SE1/4 section 23, T. 6 S., R. 1 W., of the Copper River Meridian. This occurrence is approximately located, perhaps to within one-half mile. It is locality 85 of Cobb and Matson (1972) and locality 66 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Old placer gold workings are present on this creek (Mulligan, 1974). Earlier references to Boulder Creek mostly referred to lode prospecting in the general area (Cobb, 1979 [OFR 79-1241]). Bedrock in the general area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale surface placer gold mining has occurred on this creek (Mulligan, 1974).

Production notes:

Reserves:

Additional comments:

References:

Mulligan, 1974; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Mulligan, 1974

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (north of Tiekel)

Site type: Occurrence

ARDF no.: VA064

Latitude: 61.3337 **Quadrangle:** VA B-4

Longitude: 145.2968

Location description and accuracy:

This occurrence is on the east side of Tiekel River valley, about six-tenths of a mile northeast of Tiekel. It is an an elevation of about 1,500 feet near the center of section 19, T. 6 S., R. 1 E., of the Copper River Meridian. This occurrence is probably located to within one-half mile. It is locality 60 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Zn

Ore minerals: Arsenopyrite, galena?, gold, limonite?, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Winkler and others (1981 [OFR 80-892-B]) reported that quartz veins in metaflysch of the Valdez Group contain gold, silver and zinc at this prospect. These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Small-scale surface prospecting has probably occurred at this locality.

Production notes:

Reserves:

Additional comments:

References:

Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: This report

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Telluride

Site type: Prospect

ARDF no.: VA065

Latitude: 61.3677 **Quadrangle:** VA B-4

Longitude: 145.4396

Location description and accuracy:

This prospect is on the east side of a souht tributary to Hurtle Creek; it is 1.7 miles southwest of elevation about 5,640 at an elevation of 4,000 feet in the NE1/4 section 8, T. 6 S., R. 1 W., of the Copper River Meridian. This prospect is probably located to within 1 mile. It is locality 48 of Cobb and Matson (1972) and included in locality 40 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Nine lode claims were staked near Tertiary felsic dikes on narrow, gold-bearing quartz veins in metaflysch of the Valdez Group (Moffit, 1918; Winkler and others, 1981 [OFR 80-892-B]). The quartz veins contain arsenopyrite, gold, galena, chalcopyrite, and sphalerite. These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably

silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Some development took place in 1916 (Moffit, 1918).

Production notes:

Reserves:

Additional comments:

References:

Moffit, 1918; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: This report

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Wetzier; Quail Group

Site type: Mine

ARDF no.: VA066

Latitude: 61.3794 **Quadrangle:** VA B-4

Longitude: 145.4380

Location description and accuracy:

This mine is on the east side of an unnamed south tributary to Hurtle Creek (Moffit, 1935, plate 1) 1.2 miles southwest of elevation (peak) 5640. It is at an elevation of about 3,900 feet in the NE1/4 section 5, T. 6 S., R. 1 W., of the Copper River Meridian. This mine is probably located to within one-half mile. It is locality 49 of Cobb and Matson (1972) and included in locality 40 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

En echelon quartz veins as much as 1.5 feet thick that cut metaflysch of the Valdez Group contain gold, galena, arsenopyrite, spahlerite, and chalcopyrite (Moffit, 1918; 1935). Tertiary felsic dikes locally cross-cut the veins and metaflysch. The veins strike northerly and dip 60 degrees east. They have been traced on the surface in open cuts for about 300 feet and explored underground by a short shaft and about 200 feet of adit and short drifts (Moffit, 1918, 1935). These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Veins at this prospect have been traced on the surface in open cuts for about 300 feet and explored underground by a short shaft and about 200 feet of adit and short drifts (Moffit, 1918, 1935).

Production notes:

Reserves:

Additional comments:

References:

Moffit, 1918; Moffit, 1935; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Moffit, 1935

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Fourth of July Creek

Site type: Mine

ARDF no.: VA067

Latitude: 61.4780 **Quadrangle:** VA B-4

Longitude: 145.2140

Location description and accuracy:
This small placer mine is on Fourth of July Creek, about 1.2 miles upstream from its mouth on Slate Creek. It is at an elevation of about 2,150 feet in the SW1/4 section 34, T. 4 S., R. 1 E., of the Copper River Meridian. This is locality 88 of Cobb and Matson (1972) and locality 68 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
A small amount of placer gold was recovered from Fourth of July Creek during exploration work in 1929 and 1930 (Smith, 1932, 1933). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale surface prospecting and mining occurred on Fourth of July Creek in 1929 and 1930 (Smith, 1932, 1933).

Production notes:

Reserves:

Additional comments:

References:

Smith, 1932; Smith, 1933; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: This report

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Quartz Creek

Site type: Mine

ARDF no.: VA068

Latitude: 61.4967 **Quadrangle:** VA B-4

Longitude: 145.4039

Location description and accuracy:
Winkler and others (1981 [OFR 80-892-B]) show placer mining or prospecting on about 3 miles of Quartz Creek between the elevations of about 2,300 feet and 2,950 feet. The map site is on Quartz Creek at the mouth of Bear Creek, in the NE1/4 section 28, T. 4 S., R. 1 W., of the Copper River Meridian. This is locality 89 of Cobb and Matson (1972) and locality 69 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Shallow placer gold deposits were prospected and mined at scattered locations along Quartz Creek in 1898 and 1899 (Schrader and Spencer, 1901). Most of the mining was near the mouth of Bear Creek (Moffit, 1918). Bedrock in the general area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale surface prospecting and mining occurred as early as 1898 and 1899 on Quartz Creek (Schrader and Spencer, 1901).

Production notes:

Only about 50 to 60 ounces of gold were produced during early mining and the deposits were supposedly mined out (Schrader and Spencer, 1901; Moffit, 1918).

Reserves:

Additional comments:

References:

Schrader and Spencer, 1901; Moffit, 1918; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Schrader and Spencer, 1901

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Hurtle Creek

Site type: Prospect

ARDF no.: VA069

Latitude: 61.4103 **Quadrangle:** VA B-4

Longitude: 145.4496

Location description and accuracy:
This placer gold prospect is at the juncture of Hurtle Creek and an unnamed south tributary. The prospect is at about 3,200 feet elevation in the NW1/4 section 29, T. 5 S., R. 1 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 73 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold prospects were reported on Hurtle Creek by Moxham and Nelson (1952) and Winkler and others (1981 [OFR 80-892-B]). Bedrock in the general area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Probably only prospecting has occurred along Hurtle Creek.

Production notes:

Reserves:

Additional comments:

References:
Moxham and Nelson, 1952; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Moxham and Nelson, 1952

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near mouth of Fall Creek)

Site type: Occurrence

ARDF no.: VA070

Latitude: 61.4226 **Quadrangle:** VA B-4

Longitude: 145.1534

Location description and accuracy:
This occurrence is along the north side of the Richardson Highway about 1,000 feet northeast of the mouth of Fall Creek. It is in the NW1/4 section 24, T. 5 S., R. 1 E., of the Copper River Meridian. It is locality 86 of Cobb and Matson (1972).

Commodities:

Main: W

Other:

Ore minerals: Scheelite

Gangue minerals:

Geologic description:
Scheelite has been identified in stream gravels (Jasper, 1967). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Holocene.

Deposit model:
Placer scheelite

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Only reconnaissance sampling.

Production notes:

Reserves:

Additional comments:

References:

Jasper, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Jasper, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Squaw Creek)

Site type: Prospect

ARDF no.: VA071

Latitude: 61.3753 **Quadrangle:** VA B-4

Longitude: 145.3003

Location description and accuracy:

This prospect is near Squaw Creek on the west side of Tiekel River. It is about 1.1 miles northwest of the Richardson Highway and about 2,100 feet southeast of VABM Rice. It is at an elevation of about 2,800 feet in the SW1/4 section 6, T. 6 S., R. 1 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 94 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Pb, Zn

Ore minerals: Arsenopyrite, galena?, gold, limonite?, pyrite, sphalerite?

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Lode claims were staked and were active from 1972 to 1979 on sulfide-impregnated quartz veins cutting metaflysch of the Valdez Group (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Several felsic dikes also cut the Valdez Group in this area. These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably

silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

Small-scale surface prospecting has probably occurred at this locality.

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: This report

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

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

Site type: Prospect

ARDF no.: VA072

Latitude: 61.3244 **Quadrangle:** VA B-4

Longitude: 145.4350

Location description and accuracy:

This prospect is on the divide between upper Boulder and Glacier Creeks at an elevation of about 5,600 feet in the NE1/4 section 29, T. 6 S., R. 1 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 93 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, galena?, gold, limonite?, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Lode claims were staked and active from 1923 to 1926 on gold-bearing, sulfide-impregnated quartz veins in metaflysch of the Valdez Group at this (U.S. Bureau of Mines, 1980; Winkler and others, 1981[OFR 80-892-B]). Felsic dikes are common in the area. These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:
Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:
Small-scale surface prospecting has probably occurred at this locality.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: This report

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Fall Creek

Site type: Mine

ARDF no.: VA073

Latitude: 61.4047 **Quadrangle:** VA B-3

Longitude: 145.1259

Location description and accuracy:
Placer prospecting and some mining occurred along several miles of Fall Creek (including portions in the Valdez B-3 quadrangle). The map coordinates are about the midpoint of mining in the NW1/4 section 30, T. 5 S., R. 2 E., of the Copper River Meridian. This is locality 87 of Cobb and Matson (1972) and locality 67 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold, much of which is rounded and coarse, occurs on and in bedrock along Fall Creek and adjacent low benches (Schrader and Spencer, 1901; Moffit, 1918; Mulligan, 1974). About 6 miles of Fall Creek have been prospected, and small amounts of gold were recovered between 1899 and 1916. Bedrock in Fall Creek is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale surface mining and prospecting occurred along Fall Creek between 1898 and 1916 (Cobb, 1979 [OFR 79-1241]).

Production notes:

Reserves:

Additional comments:

References:

Schrader and Spencer, 1901; Moffit, 1918; Cobb and Matson, 1972; Mulligan, 1974; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Cobb, 1979 (OFR 79-1241)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Quartz Creek; Quartz Creek Gold Mining Co.

Site type: Prospect

ARDF no.: VA074

Latitude: 61.4125 **Quadrangle:** VA B-3

Longitude: 145.3568

Location description and accuracy:

This prospect is on a ridge on the west side of upper Quartz Creek. It is about seven-tenths of a mile west of Quartz Creek and eight-tenths of a mile north-northeast of elevation (peak) 5360. It is at an elevation of about 4,800 feet near the center of the north side of section 26, T. 5 S., R. 1 W., of the Copper River Meridian. This prospect is approximately located, perhaps to within a mile. This is locality 50 of Cobb and Matson (1972) and locality 41 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Many mineralized, northwest-trending quartz veins with a steep east dip cut metaflysch of the Valdez Group at this prospect (Moffit, 1918). One quartz vein is 1 to 2 feet wide and has been traced on the surface for 400 feet along strike. The veins have been prospected with open cuts and at least two adits, one 65 feet long and the other 175 feet long. Tertiary felsic dikes locally intrude metaflysch in this area.

These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO_2 and significant amounts of CH_4, N_2, and H_2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-froming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

The veins at this prospect have been explored with open cuts and at least two adits, one 65 feet long and the other 175 feet long.

Production notes:

Reserves:

Additional comments:

References:

Moffit, 1918; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Moffit, 1918

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near the head of the Uranatina River)

Site type: Occurrence

ARDF no.: VA075

Latitude: 61.4288 **Quadrangle:** VA B-3

Longitude: 144.9706

Location description and accuracy:

This occurrence is on the ridge on the north side of the upper Uranatina River about 1,000 feet west of elevation (peak) 5740. It is at an elevation of about 5,900 feet in the SW1/4 section 13, T. 5 S., R. 2 E., of the Copper River Meridian. This occurrence is probably located to within one-quarter mile; it is locality 80 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Ag, Pb, Zn

Other:

Ore minerals: Galena?, pyrite, sphalerite

Gangue minerals:

Geologic description:

Stratiform, iron-stained zones extend for as much as several hundred meters in quartz-mica schist of the Haley Creek terrane (Winkler and others, 1981 [OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]). These zones contain disseminated pyrite, sphalerite, and galena (?). These may be epigenetic replacement deposits and younger than the enclosing schist (Winkler and others, 1981 [OFR 80-892-B]).

Alteration:

Age of mineralization:

Schist of the Haley Creek terrane was probably metamorphosed in the mid-Cretaceous (Winkler and others, 1981 [OFR 80-892-A]). If the deposits are epigenetic, they are probably Late Cretaceous or Tertiary.

Deposit model:

Disseminated replacement deposits (?) in quartz-mica schist

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface examination and possibly sampling have taken place at this occurrence.

Production notes:

Reserves:

Additional comments:

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (southeast of Kimball Pass)

Site type: Prospect

ARDF no.: VA076

Latitude: 61.4906 **Quadrangle:** VA B-3

Longitude: 144.9886

Location description and accuracy:

This prospect is on the north side of the uplands west of upper Bernard Creek. It is about 2 miles southeast of Kimball Pass and 0.4 mile northeast of elevation (peak) 5644 at an elevation of about 4,600 feet in the SE1/4 section 26, T. 4 S., R. 2 E., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 98 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au?

Other:

Ore minerals: Gold?

Gangue minerals:

Geologic description:

Lode claims have been staked at this location but no other information is available (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). The prospect is the southern part of the Haley Creek terrane where metaplutonic rocks, ranging from gabbro to trondjhemite in compostion, predominate (Winkler and others, 1981 [OFR 80-892-A]). The protolith ages are not known, but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later.

Alteration:

Age of mineralization:

Not known; the prospect is the southern part of the Haley Creek terrane where metaplutonic rocks ranging from gabbro to trondjhemite predominate (Winkler and others, 1981 [OFR 80-892-A]). The protolith ages are not known, but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later.

Deposit model:

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Probably only reconnaissance surface examinations have been done.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Ernestine Creek

Site type: Prospect

ARDF no.: VA077

Latitude: 61.4165 **Quadrangle:** VA B-3

Longitude: 145.0846

Location description and accuracy:
Winkler and others (1981, locality 72 [OFR 80-892-B]) indicated placer prospecting for about 1.8 miles of lower Ernestine Creek between the elevations of 1,750 and 2,000 feet. The map site is the approximate midpoint of this placer prospect. It is in the SE1/4 section 20, T. 5 S., R. 2 E., of the Copper River Meridian.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold occurs in shallow gravels of Ernestine Creek (Rohn, 1900; Winkler and others, 1981 [OFR 80-892-B]). The deposits are probably on bedrock and similar to those on Fall Creek (VA073). Bedrock in vicinity of Ernestine Creek is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-B]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Surface prospecting occurred along Fall Creek in about 1900 (Rohn, 1900).

Production notes:
Possilby some minor production.

Reserves:

Additional comments:

References:
Rohn, 1900; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Rohn, 1900

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Taral)

Site type: Prospect

ARDF no.: VA078

Latitude: 61.4826 **Quadrangle:** VA B-2

Longitude: 144.4571

Location description and accuracy:

This prospect is about one-quarter mile southwest of the the mouth of O'Brien Creek and 4,200 feet northwest of the site of Taral on the Copper River. It is at an elevation of about 1,000 feet in the NW1/4 of section 35, T. 4 S., R. 5 E., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 104 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite?

Gangue minerals:

Geologic description:

Lode claims were staked for copper deposits and kept current from 1971 to 1978 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). No other information is not available. Bedrock in this area is schist of the Haley Creek terrane (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Not known; schist of the Haley Creek terrane was probably metamorphosed in the mid-Cretaceous (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Probably only reconnaissance surface examinations.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Canyon Creek)

Site type: Occurrence

ARDF no.: VA079

Latitude: 61.2762 **Quadrangle:** VA B-1

Longitude: 144.3880

Location description and accuracy:

This occurrence is about one-half mile southwest of the pass at the head of Canyon Creek near the foot of two active glaciers. It is at an elevation of about 4,300 feet in the NE1/4 section 7, T. 7 S., R. 6 E., of the Copper River Meridian. This occurrence is probably located to within one-quarter mile. It is locality 81of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Zn?

Other:

Ore minerals: Chalcopyrite?, limonite, pyrite, sphalerite?

Gangue minerals:

Geologic description:

Diffuse, widespread iron-stained zones in mylonitic metavolcanic rocks of the Haley Creek terrane contain disseminated pyrite and possibly chalcopyrite and sphalerite (Winkler and others, 1981 [OFR 80-892-B]). The polydeformed Haley Creek terrane consists of metasedimentary rocks, including marble and metaplutonic rocks that range from peridotite to trondjhemite (Winkler and others, 1981 [OFR 80-892-A]). The protolith ages are not known, but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Oxidation; diffuse iron-stained zones are present.

Age of mineralization:

Not known; the protolith ages of metasedimentary and metaplutonic rocks in the Haley Creek terrane are not known, but much deformation and recrystallization probably occurred in the mid-Cretaceous or later (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:
Submarine volcanogenic (Winkler and others, 1981 [OFR 80-892-B])

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface reconnaissance only.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wrangell-St. Elias National Park.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Spirit Mountain

Site type: Prospect

ARDF no.: VA080

Latitude: 61.3056 **Quadrangle:** VA B-1

Longitude: 144.2645

Location description and accuracy:

This prospect is on the west side of upper Canyon Creek valley about 1.8 miles southwest of the west end of summit Lake and nine-tenths of a mile southeast of elevation 5,990. It is at an elevation of 4,000 feet near center of the east boundary of section 35, T. 6 S., R. 6 E., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 61 of Cobb and Matson (1972) and locality 52 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Ni

Other: Ag, Co, PGE, Zn

Ore minerals: Bravoite, chalcopyrite, limonite, magnetite, pentlandite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Antigorite, chlorite, epidote, hornblende, serpentine, talc, tremolite

Geologic description:

Mafic and ultramafic sill-like bodies that intrude metasedimentary rocks of the Haley Creek terrane contain disseminations and segregations of bravoite, chalcopyrite, pentlandite, pyrite, pyrrhotite, and sphalerite (Kingston and Miller, 1945; Herried, 1970; Winkler and others, 1981 [OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]). The principal mineralization is in altered peridotite and a nearby hornblendite dike (Herreid, 1970). The peridotite has been altered to antigorite, chlorite, epidote, hornblende, limonite, magnetite, serpentine, tremolite, and talc. One mineralized body is 200 feet long, 1 inch to 22 feet wide, and exposed over 150 feet vertically. Another mineralized body is 45 feet long, 3 feet thick at the surface, but it pinches down to a thickness of 6 inches within 10 feet of the surface (Kingston and Miller, 1946). The resource estimate for these two bodies is 6,500 tons of material that contain 0.22 to 7.61 percent nickel and 0.12 to 1.56 percent copper (Kingston and Miller, 1945, p. 56). The highest values reported for other samples are 1.70 percent nickel and 2.95 percent copper (Pierce, 1945). Heads from a metallurgical sample contained 1.16 percent nickel, 0.76 percent copper, 0.04 percent cobalt, 0.02 percent zinc, 0.007 ounce of gold per ton, 0.077 ounce of silver per ton, 0.006

ounce of platinum per ton, and 0.005 ounce of palladium per ton (Foley and others, 1989). This prospect was explored by a large open cut, numerous test pits, and a 50-foot-long adit (Moffit, 1914; Pierce, 1946). The polydeformed host rocks of the Haley Creek terrane consist of metasedimentary rocks, including marble, and metaplutonic rocks that range from peridotite to trondjhemite (Winkler and others, 1981 [OFR 80-892-A]). The protolith ages are not known, but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later.

Alteration:

The ultramafic host rocks are extensively altered to various assemblages of antigorite, chlorite, epidote, hornblende, limonite, magnetite, serpentine, tremolite, and talc.

Age of mineralization:

Not known; the protolith ages of metasedimentary and metaplutonic rocks in the Haley Creek terrane are not known but much deformation and recrystallization probably occurred in the mid-Cretaceous or younger (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Duluth Cu-Ni-PGE? (Cox and Singer, 1986; model 5a)

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

5a?

Production Status: None

Site Status: Inactive

Workings/exploration:

This prospect was explored by a large open cut, numerous test pits, and a 50-foot long adit (Moffit, 1914; Pierce, 1946).

Production notes:

Reserves:

One mineralized body is 200 feet long, 1 inch to 22 feet thick, and exposed over 150 feet vertically. Another mineralized body is 45 feet long; it is 3 feet thick at the surface, but it pinches down to a 6-inch thickness within 10 feet of the surface (Kingston and Miller, 1945). The resource in these two bodies is 6,500 tons of material that contains 0.22 to 7.61 percent nickel and 0.12 to 1.56 percent copper (Kingston and Miller, 1945, p. 56).

Additional comments:

This prospect is in Wrangell-St. Elias National Park.

References:

Moffit, 1914; Pierce, 1946; Kingston and Miller, 1945; Herreid, 1970; Cobb and Matson,

1972; Winkler and others, 1981(OFR 80-892-B); Foley and others, 1989.

Primary reference: Kingston and Miller, 1945

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (on Falls Creek)

Site type: Prospect

ARDF no.: VA081

Latitude: 61.3536 **Quadrangle:** VA B-1

Longitude: 144.2577

Location description and accuracy:

This prospect is in the headwaters of Falls Creek. It is on the south side of Falls Creek, at an elevation of 4,900 feet and about one-quarter mile northwest of elevation (peak) 5589. It is in the NW1/4 section 13, T. 6 S., R. 6 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within a mile. It is locality 60 of Cobb and Matson (1972) and locality 51 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyrite, covellite

Gangue minerals:

Geologic description:

Moffit (1914, p. 52) reported disseminated bornite, covellite, and chalcopyrite in fractured greenstone. This prospect was explored with two adits, 105 and 150 feet long and approximately 400 feet apart, on the south side of Falls Creek. The greenstone is in the Paleozoic Skolai Group (Winkler and others, 1981 [OFR 80-892-A]). The copper mineralization may be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization may be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:

Thin veins, impregnations, and fracture fillings in greenstone; may be related to Kenne-

cott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:

This prospect was explored with two adits, 105 and 150 feet long and approximately 400 feet apart, on the south side of Falls Creek (Moffit, 1914, p. 52).

Production notes:

Reserves:

Additional comments:

This prospect is in Wrangell-St. Elias National Park.

References:

Moffit, 1914; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Moffit, 1914

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (on Divide Creek)

Site type: Prospect

ARDF no.: VA082

Latitude: 61.3669 **Quadrangle:** VA B-1

Longitude: 144.2846

Location description and accuracy:
This prospect is in the valley of Divide Creek (Moffit, 1914) at an elevation of about 4,200 feet in the NW1/4 section 11, T. 6 S., R. 6 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within a mile. It is locality 59 of Cobb and Matson (1972) and locality 50 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyrite, covellite, malachite

Gangue minerals:

Geologic description:
Moffit (1914, p. 52) reported veins and disseminations of chalcopyrite and bornite in fractured greenstone; covellite and malchite are present in small amounts. The greenstone at this locality is in the Paleozoic Skolai Group (Winkler and others, 1981 [OFR 80-892-A]). The copper mineralization may be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:
The copper mineralization may be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; may be related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
One small open cut (Moffit, 1914).

Production notes:

Reserves:

Additional comments:
This prospect is in Wrangell-St. Elias National Park.

References:
Moffit, 1914; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Moffit, 1914

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (on Surprise Creek)

Site type: Prospect

ARDF no.: VA083

Latitude: 61.4018 **Quadrangle:** VA B-1

Longitude: 144.2522

Location description and accuracy:

This prospect is on Surprise Creek, a south tributary to Nerelna Creek. It is at an elevation of about 3,200 feet, in the SW1/4 section 25, T. 5 S., R. 6 E., of the Copper River Meridian. This prospect is approximately located, perhaps to within a mile or more. It is locality 58 of Cobb and Matson (1972) and locality 49 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag?

Ore minerals: Bornite, chalcocite, chalcopyrite, chrysocolla, pyrite

Gangue minerals: Epidote, quartz

Geologic description:

Fractures in shattered greenstone contain quartz and epidote (Moffit, 1914, p. 52). Bornite, chalcocite, chalcopyrite, chrysocolla, and pyrite are in the quartz and are locally disseminated in the host greenstone. A short adit was driven. The mineralization is similar to that in the Nikolai Greenstone of the northeast Valdez quadrangle, but this geologic unit has not been mapped in this area. Uplands in the headwaters of Surprise Creek are metamorphic rocks of the Paleozoic Skolai Group; a Jurassic intermediate-composition pluton is present to the west (Winkler and others, 1981 [OFR 80-892-A]). However, exposures are limited on lower Surprise Creek, and this prospect may be in unrecognized Nikolai Greenstone. The copper mineralization may be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

The copper mineralization may be related to the mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle to the east (MacKevett and

others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; may be related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
A short adit was driven before 1912 (Moffit, 1914).

Production notes:

Reserves:

Additional comments:
This prospect is in Wrangell-St. Elias National Park.

References:
Moffit, 1914; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Moffit, 1914

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Blackney; Blakney

Site type: Prospect

ARDF no.: VA084

Latitude: 61.4513 **Quadrangle:** VA B-1

Longitude: 144.3310

Location description and accuracy:

This prospect is on an unnamed east tributary to Taral Creek about 1.1 miles north of the pass at the head of Taral Creek. It is at an elevation of about 3,500 feet and about 1,000 feet east of the center of section 9, T. 5 S., R. 6 E., of the Copper River Meridian, where a cabin is shown on the topographic map. This prospect is probably accurately located. It is locality 57 of Cobb and Matson (1972) and locality 48 of Winkler and others (1981[OFR 80-892-B]).

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, pyrite

Gangue minerals:

Geologic description:

A 3-foot-wide shear zone in Triassic Nikolai Greenstone contains sheeted from 0.5 to 18 inches thick veins with pyrite and chalcopyrite (Moffit, 1914; Winkler and others, 1981 [OFR 80-892-A]). The shear zone, which trends N75W and dips 45S, was traced on the surface for a distance of 200 feet. A decline was sunk on the shear zone. The mafic metavolcanic rocks were originally thought to be part of the Paleozoic Skolai Group (Winkler and others, 1981 [OFR 80-892-B]), but Winkler and others (1981 [OFR 80-892-A]) indicated the area consists of Triassic Nikolai Greenstone intruded to the east by Jurassic intermediate plutonic rocks. The copper mineralization may be related to the regional mineralizing event that produced the rich Kennecott copper deposits in the McCarthy quadrangle (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Post -Triassic; the host rocks are Triassic mafic volcanic rocks. The copper mineralization may be related to the mineralizing event that produced the rich Kennecott copper de-

posits in the McCarthy quadrangle to the east (MacKevett and others, 1997). This event is interpreted to have accompanied Late Jurassic or Early Cretaceous deformation and metamorphism (MacKevett and others, 1997, p. 88).

Deposit model:
Thin veins, impregnations, and fracture fillings in greenstone; may be related to Kennecott-type copper deposits (Mackevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
A decline was sunk on the shear zone, which was traced for a distance of 200 feet on the surface (Moffit, 1914). Lode claims were patented in 1911 or earlier.

Production notes:

Reserves:

Additional comments:
This prospect is in Wrangell-St. Elias National Park.

References:
Moffit, 1914; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); MacKevett and others, 1997.

Primary reference: Moffit, 1914

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

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

Site type: Occurrence

ARDF no.: VA085

Latitude: 61.4950 **Quadrangle:** VA B-1

Longitude: 144.2590

Location description and accuracy:

This occurrence is located on a low ridge along the west side of the Chitina River, about 500 feet south of the north boundary of the Valdez B-1 topographic map. It is in the NE1/4 section 26, T. 4 S., R. 6 E., of the Copper River Meridian. This prospect is probably located to within one-quarter mile; it is locality 61 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Mo

Other:

Ore minerals: Chalcopyrite, molybdenite

Gangue minerals:

Geologic description:

Sparse chalcopyrite and molydenite are disseminated in Jurassic (?) biotite granodiorite (Winkler and others, 1981 [OFR 80-892-B]; Winkler and others, 1981 [OFR 80-892-A]). The pluton is in metamorphic rocks that include mafic metavolcanic rocks of the Paleozoic Skolai Group.

Alteration:

Age of mineralization:

Jurassic?; the probable age of the granodiorite host rock (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

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

21a

Production Status: None

Site Status: Inactive

Workings/exploration:
Probably only reconnaissance surface examination.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wrangell-St. Elias National Park.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (on the Kuskulana River)

Site type: Prospect

ARDF no.: VA086

Latitude: 61.4795 **Quadrangle:** VA B-1

Longitude: 144.1662

Location description and accuracy:
This prospect is on the north side of the Kuskulana River about eight-tenths of a mile northeast of its mouth on the Chitina River. It is at an elevation of about 800 feet near the center of the east boundary of section 32, T. 4 S., R. 7 E., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 107 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Ag, Pb

Other:

Ore minerals: Galena?

Gangue minerals:

Geologic description:
Lode claims were staked and kept active from 1969 to 1979 on lead and silver deposits at this location (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). The prospect is in metavolcanic rocks of the Paleozoic Skolai Group (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Paleozoic or younger; the prospect is in metavolcanic rocks of the Paleozoic Skolai Group (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Probably only reconnaissance surface examinations.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wrangell-St. Elias National Park.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (north of Summit Lake)

Site type: Occurrence

ARDF no.: VA087

Latitude: 61.3408 **Quadrangle:** VA B-1

Longitude: 144.1777

Location description and accuracy:
This occurrence is on a unnamed north tributary to Bridge Creek at an elevation of about 4,500 feet. It is about 2.4 miles north-northwest of the east end of Summit Lake in the NE1/4 section 20, T. 6 S., R. 7 E., of the Copper River Meridian. This occurrence is probably located to within one-half mile. It is locality 106A of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Ni

Other:

Ore minerals: Chalcopyrite?, pentlandite?

Gangue minerals:

Geologic description:
Winkler and others (1981 [OFR 80-892-B]) report that copper and nickel sulfides are disseminated in mafic rocks of the Haley Creek terrane (Winkler and others, 1981 [OFR 80-892-A]). The polydeformed Haley Creek terrane consists of metasedimentary rocks, including marble and metaplutonic rocks that range from peridotite to trondjhemite (Winkler and others, 1981 [OFR 80-892-A]). The protolith ages are not known but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later.

Alteration:

Age of mineralization:
Not known; the protolith ages of metasedimentary and metaplutonic rocks in the Haley Creek terrane are not known, but much deformation and recrystallization probably occurred in the mid-Cretaceous or later (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:
Magmatic disseminations and segregations of copper and nickel sulfides in mafic rocks

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only surface reconnaissance.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wrangell-St. Elias National Park.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (northeast of Summit Lake)

Site type: Occurrence

ARDF no.: VA088

Latitude: 61.3302 **Quadrangle:** VA B-1

Longitude: 144.1639

Location description and accuracy:

This occurrence is on the north side of the ridge between Summit Lake and an unnamed north tributary to Bridge Creek at an elevation of about 5,000 feet. It is in SW1/4 section 21, T. 6 S., R. 7 E., of the Copper River Meridian. This occurrence is probably located to within one-half mile. It is locality 106B of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Ni

Other:

Ore minerals: Chalcopyrite?, pentlandite?

Gangue minerals:

Geologic description:

Winkler and others (1981 [OFR 80-892-B]) reported that copper and nickel sulfides are disseminated in mafic rocks of the Haley Creek terrane (Winkler and others, 1981 [OFR 80-892-A]). The polydeformed Haley Creek terrane consists of metasedimentary rocks, including marble and metaplutonic rocks that range from peridotite to trondjhemite (Winkler and others, 1981 [OFR 80-892-A]). The protolith ages are not known, but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later.

Alteration:

Age of mineralization:

Not known; the protolith ages of metasedimentary and metaplutonic rocks in the Haley Creek terrane are not known, but much deformation and recrystallization probably occurred in the mid-Cretaceous or later (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Magmatic disseminations and segregations of copper and nickel sulfides in mafic rocks

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface reconnaissance only.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wrangell-St. Elias National Park.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Summit Lake

Site type: Occurrence

ARDF no.: VA089

Latitude: 61.3286 **Quadrangle:** VA B-1

Longitude: 144.3290

Location description and accuracy:

This occurrence is in the headwaters of a small unnamed south tributary to Canyon Creek. It is at an elevation of about 4,100 feet about 2.9 miles west-northwest of the west end of Summit Lake in the center of the boundary between section 22 and section 27, T. 6 S., R. 6 E., of the Copper River Meridian. This occurrence is probably located to within one-half mile. It is locality 106C of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Ni

Other:

Ore minerals: Chalcopyrite?, pentlandite?

Gangue minerals:

Geologic description:

Winkler and others (1981 [OFR 80-892-B]) report that copper and nickel sulfides are disseminated in mafic rocks of the Haley Creek terrane at this locality (Winkler and others, 1981 [OFR 80-892-A]). The polydeformed Haley Creek terrane consists of metasedimentary rocks, including marble and metaplutonic rocks that range from peridotite to trondjhemite (Winkler and others, 1981 [OFR 80-892-A]). The protolith ages are not known, but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later.

Alteration:

Age of mineralization:

Not known; the protolith ages of metasedimentary and metaplutonic rocks in the Haley Creek terrane are not known, but much deformation and recrystallization probably occurred in the mid-Cretaceous or later (Winkler and others, 1981 [OFR 80-892-A).

Deposit model:

Magmatic disseminations and segregations of copper and nickel sulfides in mafic rocks

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface reconnaissance only.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wrangell-St. Elias National Park.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (south of Summit Lake)

Site type: Occurrence

ARDF no.: VA090

Latitude: 61.2770 **Quadrangle:** VA B-1

Longitude: 144.2577

Location description and accuracy:

This occurrence is about one-quarter mile northeast of peak 7163 on the divide between Tebay River and the headwaters of Canyon Creek. The map site is on the divide at an elevation of about 6,000 feet in the NE1/4 section 12, T. 7 S., R. 6 E., of the Copper River Meridian. This occurrence is probably located to within a half mile. It is locality 106D of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Ni

Other:

Ore minerals: Chalcopyrite?, pentlandite?

Gangue minerals:

Geologic description:

Winkler and others (1981 [OFR 80-892-B]) reported that copper and nickel sulfides are disseminated in mafic rocks of the Haley Creek terrane (Winkler and others, 1981 [OFR 80-892-A]). The polydeformed Haley Creek terrane consists of metasedimentary rocks, including marble and metaplutonic rocks that range from peridotite to trondjhemite in composition (Winkler and others, 1981[OFR 80-892-A]). The protolith ages are not known, but much deformation and recrystallization of the Haley Creek terrane probably occurred in the mid-Cretaceous or later.

Alteration:

Age of mineralization:

Not known; the protolith ages of metasedimentary and metaplutonic rocks in the Haley Creek terrane are not known, but much deformation and recrystallization probably occurred in the mid-Cretaceous or later (Winkler and others, 1981 [OFR 80-892-BA).

Deposit model:

Magmatic disseminations and segregations of copper and nickel sulfides in mafic rocks

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface reconnaissance only.

Production notes:

Reserves:

Additional comments:
This occurrence is in Wrangell-St. Elias National Park.

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Hecla

Site type: Prospect

ARDF no.: VA091

Latitude: 61.1339 **Quadrangle:** VA A-8

Longitude: 146.6652

Location description and accuracy:

This prospect is on the ridge crest at the head of McAllister Creek; it is at an elevation of 1,900 feet just northeast of the center of section 33, T. 8 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 9 of Cobb and Matson (1972) and locality 6 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Pb

Ore minerals: Arsenopyrite, galena, gold, pyrite

Gangue minerals: Calcite, chlorite, quartz, sericite

Geologic description:

Shear zones as much as 8 feet thick with irregularly distributed gold-bearing quartz lenses cut metaflysch of the Valdez Group (Brooks, 1912). The quartz lenses also contain arsenopyrite, pyrite, and galena. These mineralized zones are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably

silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

At least surface exploration has taken place on this prospect; two claims were staked. and the shear zone was reported to have been traced for about one-half mile (Brooks, 1912).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Brooks, 1912

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Palmer

Site type: Prospect

ARDF no.: VA092

Latitude: 61.1410 **Quadrangle:** VA A-8

Longitude: 146.6384

Location description and accuracy:

This prospect is in the headwaters of Palmer Creek, 1,000 feet south of Shoup Glacier; it is at an elevation of about 900 feet near the center of the south side of section 27, T. 8 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 10 of Cobb and Matson (1972) and locality 7 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

A shear zone, 2.5 to 4.5 feet wide, cuts metaflysch of the Valdez Group and contains pyritiferous quartz stringers with free gold (Brooks, 1912). The shear zone that strikes northwest and is approximately vertical is marked by crushed country rock and a slickensided and gouge-lined hanging wall. At least one 100-foot-long adit explored this deposit, which is thought to be a continuation of the I.X.L. shear zone (VA113).

This deposit is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

At least one 100-foot-long adit explored this deposit, which is thought to be a continuation of the I.X.L. shear zone (VA113).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Brooks, 1912

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Bessie Williams

Site type: Prospect

ARDF no.: VA093

Latitude: 61.1516 **Quadrangle:** VA A-8

Longitude: 146.7737

Location description and accuracy:

This prospect is about one-half mile northwest of the east end of Lake No. 1 and 1.2 miles northwest of Anderson Pass; it is at an elevation of about 3,000 feet on the boundary between sections 25 and 26, T. 8 S., R. 9 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 8 of Cobb and Matson (1972) and locality 5 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

A 3-foot-thick shear zone with quartz veins as much as 1 foot thick cuts metaflysch of the Valdez Group at this prospect (Jansons and other, 1984). It was explored by a 25-foot-long adit. A chip sample collected by the U.S. Bureau of Mines contained 0.42 ppm gold and 0.3 ppm silver (Jansons and others, 1984). This deposit is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

This prospect was explored by a 25-foot-long adit (Jansons and others, 1984).

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Pickthorn, 1982; Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Jansons and others, 1984

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): National

Site type: Prospect

ARDF no.: VA094

Latitude: 61.1590 **Quadrangle:** VA A-8

Longitude: 146.8499

Location description and accuracy:

This prospect is seven-tenths of a mile northwest of the northwest end of Lake No. 1, on the east side of Columbia Glacier; it is at an elevation of about 2,500 feet in the SE1/4 section 21, T. 8 S., R. 9 W., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-half mile. It is locality 6 of Cobb and Matson (1972).

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

A 5-foot-wide vuggy, gold-bearing quartz vein cuts metaflysch of the Valdez Group at this locality (Jansons and others, 1984). Johnson (1916) reported that some gold was mortared from this deposit in 1915. The U.S. Bureau of Mines collected a chip sample that contained 0.13 ppm gold and 4.9 ppm silver; a grab sample contained 0.08 ppm gold and 14.1 ppm silver (Jansons and others, 1984). This prospect was explored by an open cut.

This deposit is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

An open cut explored this deposit (Jansons and others, 1984).

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1916; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Jansons and others, 1984

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mayfield; Alaska Mayfield

Site type: Mine

ARDF no.: VA095

Latitude: 61.1591 **Quadrangle:** VA A-8

Longitude: 146.8304

Location description and accuracy:

This mine is one-half mile northwest of the northwest end of Lake No. 1 along the east side of Columbia Glacier. It is at an elevation of about 3,000 feet in the SW1/4 section 22, T. 8 S., R. 9 W., of the Copper River Meridian. This mine is probably located to within one-quarter mile. It is locality 7 of Cobb and Matson (1972) and locality 4 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

Discontinuous gold-bearing quartz veins and lenses occur along a northwest-trending zone that cuts metaflysch of the Valdez Group (Johnson, 1915). The zone dips to the north and can be traced on the surface for several hundred feet. The quartz veins contain gold, pyrite, chalcopyrite, galena, sphalerite, and arsenopyrite. One of the larger veins was from 1 to 10 feet wide and 200 feet long (Jansons and others, 1984). These veins were explored and developed by at least two adits and more than 600 feet of underground workings (Cobb, 1979 [OFR 79-1241]; Jansons and others, 1984). The veins were located in 1911, and development work and/or production was reported intermittently to 1938 (Cobb, 1979 [OFR 79-1241]), but the total production is only 13 ounces of gold and 2 ounces of silver (Jansons and others, 1984). The U.S. Bureau of Mines collected nine chip samples from the area that contained 0.03 to 70 ppm gold and 0.1 to 25.2 ppm silver; a grab sample contained 52 ppm gold and 22.5 ppm silver. Jansons and others (1984) identified inferred reserves of 600 tons of material that contain 9.54 ppm gold and 3.4 ppm silver.

These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly

contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

These veins were explored and developed by at least two adits and more than 600 feet of underground workings (Cobb, 1979 [OFR 79-1241]; Jansons and others, 1984).

Production notes:

These deposits were located in 1911 and development work and/or production wre reported intermittently to 1938 (Cobb, 1979 [OFR 79-1241]), but total reported production is only 13 ounces of gold and 2 ounces of silver (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Minnie; Olson; Bald Mountain Group

Site type: Mine

ARDF no.: VA096

Latitude: 61.2007 **Quadrangle:** VA A-8

Longitude: 146.6469

Location description and accuracy:

This mine is eight-tenths of a mile southeast of Mount Cameron at an elevation of about 3,000 feet in the SW1/4 section 3, T. 8 S., R. 8 W., of the Copper River Meridian. This mine is located to within one-half mile. It is locality 4 of Cobb and Matson (1972).

Commodities:

Main: Au

Other: Pb, Zn

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

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

Gold-bearing quartz veins as much as 2 feet wide cut metaflysch of the Valdez Group (Johnson, 1915). The veins strike northwest and dip steeply to both the north and south. The quartz veins also contain pyrite, sphalerite, galena, and a brown-weathering carbonate mineral. The Minnie deposit was explored by three or four short adits, and the Olson deposit was explored by an adit and drifts that totaled about 250 feet in length (Johnson, 1915). Open cuts explored the deposits on the surface. A few tons of ore were processed from each deposit. The U.S. Bureau of Mines collected three chip samples from the Minnie deposit that contained as much as 12.0 ppm gold and 7.0 ppm silver; a grab sample contained 45 ppm gold and 12.5 ppm silver (Jansons and others, 1984).

These deposits are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez

Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The Minnie deposit was explored by three or four short adits, and the Olson deposit was explored by an adit and drifts that totaled about 250 feet in length (Johnson, 1915). Open cuts explored the deposits on the surface.

Production notes:

A few tons of ore were processed from each deposit (Johnson, 1915).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Rough and Tough; Reeve and Thompson; Ruff and Tuff

Site type: Mine

ARDF no.: VA097

Latitude: 61.2078 **Quadrangle:** VA A-8

Longitude: 146.7926

Location description and accuracy:

This mine is 3.6 miles west of Mount Cameron on the southwest side of a nunatak in the eastern part of Columbia Glacier (Pickthorn, 1982, sheet 1); it is at an elevation of about 2,300 feet in the NW1/4 section 2, T. 8 S., R. 9 W., of the Copper River Meridian. This mine is located to within one-quarter mile. It is locality 1 of Cobb and Matson (1972) and locality 1 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

Gold-bearing quartz veins cut metaflysch of the Valdez Group and a Tertiary granitic plug at this locality (Smith, 1937, 1939). The quartz fills gashes in the granitic rock and surrounding hornfelsed metagraywacke. The veins contain sulfide minerals common to other gold-bearing quartz veins in the area; arsenopyrite and pyrite (Smith, 1937). Open cuts and at least 372 feet of underground workings explored the deposit (Jansons and others, 1984). Several tons of ore were recovered from open cuts and processed. The total production is 76 ounces of gold and 20 ounces of silver (Jansons and others, 1984). The U.S. Bureau of Mines collected seven chip samples from this area that contained 0.18 ppm to 2.52 ounces of gold per ton and 0.3 ppm to 0.89 ounce of silver per ton; a grab sample contained 14 ppm gold and 3.3 ppm silver. Eight other samples from this area contained up to 9.0 ppm gold (Pickthorn, 1982).

These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation

temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Open cuts and at least 372 feet of underground workings explored the deposit (Jansons and others, 1984).

Production notes:

Several tons of ore were recovered from open cuts and processed. The total reported production is 76 ounces of gold and 20 ounces of silver (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Smith, 1937; Smith, 1939; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Pickthorn, 1982; Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Jansons and others, 1984

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Cameron-Johnson; Valdez Gold Mining Co

Site type: Mine

ARDF no.: VA098

Latitude: 61.2052 **Quadrangle:** VA A-8

Longitude: 146.6668

Location description and accuracy:

This mine is one-third of a mile south of the summit of Mount Cameron; it is at an elevation of about 5,100 feet on the ridge crest near the center of section 4, T. 8 S., R. 8 W., of the Copper River Meridian. This mine is located to within one-quarter mile. It is locality 3 of Cobb and Matson (1972) and locality 3 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Pb, Zn

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

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

Several gold-bearing quartz-carbonate veins as much as 11.5 feet thick, cut metaflysch of the Valdez Group (Johnson, 1915). The veins strike northwest and dip steeply to the north. The largest veins were traceable for as much as 300 feet. The veins carry about 3 percent sulfide minerals that include pyrite, galena, sphalerite, and arsenopyrite. The deposits are exposed from about 2,400 to 4,500 feet in elevation and were explored with eight adits and about 2,000 feet of underground workings (Cobb, 1979 [OFR 79-1241]; Jansons and others, 1984). A mill was installed on the property, and some ore was processed most years from 1913 to 1921. Total reported production from these veins was 585 ounces of gold and 18 ounces of silver (Jansons and others, 1984). The U.S. Bureau of Mines collected 25 chip samples that contained 0.06 to 21.0 ppm gold and 0.1 to 8.5 ppm silver; 12 grab samples contained as much as 15.3 ounces of gold and 4.3 ounces of silver per ton (Jansons and others, 1984).

These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4,

N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The deposits are exposed from about 2,400 to 4,500 feet in elevation and were explored with eight adits and about 2,000 feet of underground workings (Cobb, 1979, OFR 79-1241; Jansons and others, 1984).

Production notes:

A mill was installed on the property, and some ore was processed most years from 1913 to 1921. Total reported production from these veins was 585 ounces of gold and 18 ounces of silver (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Columbia Glacier (west)

Site type: Prospect

ARDF no.: VA099

Latitude: 61.0986 **Quadrangle:** VA A-8

Longitude: 146.9978

Location description and accuracy:

This prospect is nine-tenths of a mile south-southwest of the summit of the Great Nunatak and about one-half mile west of the east lobe of Columbia Glacier. It is at about 1,500 feet elevation in the SE1/4 section 9, T. 9 S., R. 10 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 85 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold?

Gangue minerals:

Geologic description:

A lode claim was staked in 1916 for gold (U.S. Bureau of Mines, 1980; Winkler and others, 1981[OFR 80-892-B]). Bedrock in this area is siliciclastic rocks of the Tertiary Orca Group; the Contact fault that separates the Orca and Valdez Group is about 2 miles to the northeast (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Tertiary; deposit is assumed to be epigenetic and to cross cut Lower Tertiary rocks of the Orca Group.

Deposit model:

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

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

36a?

Production Status: None

Site Status: Probably inactive

Workings/exploration:
At least surface prospecting has occurred at this locality.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Columbia Glacier (east)

Site type: Prospect

ARDF no.: VA100

Latitude: 61.0861 **Quadrangle:** VA A-8

Longitude: 146.9402

Location description and accuracy:
This prospect is 2,100 feet west of peak 3780 and 2.3 miles southeast of the summit of the Great Nunatak; it is at an elevation of about 2,000 feet in the SE1/4 section 14, T. 9 S., R. 10 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 86 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold?

Gangue minerals:

Geologic description:
A lode claim was staked in 1968 for gold deposits (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Bedrock in this area is siliciclastic rocks of the Tertiary Orca Group; the Contact fault that separates the Orca and Valdez Group is about 1.5 miles to the northeast (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Tertiary; deposit is assumed to be epigenetic and to cross cut Lower Tertiary rocks of the Orca Group.

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a?

Production Status: None

Site Status: Probably inactive

Workings/exploration:
At least surface prospecting has occurred at this locality.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Gold King

Site type: Mine

ARDF no.: VA101

Latitude: 61.2071 **Quadrangle:** VA A-8

Longitude: 146.7329

Location description and accuracy:

This mine is 1.7 miles west of Mount Cameron on the east end of a nunatak in the eastern part of Columbia Glacier; it is at an elelvation of about 3,600 feet in the NW1/4 of section 6, T. 8 S., R. 8 W., of the Copper River Meridian. This mine is located to within one-quarter mile. It is locality 2 of Cobb and Matson (1972) and locality 2 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite, sphalerite, stibnite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

The Gold King mine consists of gold-bearing quartz veins that cut metaflysch of the Valdez Group (Johnson, 1915). The principal vein strikes northwest and dips 50 to 60 degrees south; it is as much as a few feet thick but averages about one foot in thickness. Gouge is developed along one wall and merges into quartz stringer zones in shattered metagraywacke. The quartz veins contain calcite, a cream-colored carbonate mineral, and about 3 per cent sulfides including pyrite, galena, chalcopyrite, sphalerite, and stibnite (Johnson, 1915). The veins were developed by three adits and more than 2,000 feet of underground workings (Johnson, 1915; Cobb, 1979 [OFR 79-1241]; Jansons and others, 1984). A mill was installed on site. and total reported production between 1911 and 1922 was 1,997 ounces of gold and 187 ounces of silver from 1,560 tons of ore (Hoekzema and others, 1986). The average grade indicated by this production is about 1.3 ounces of gold per ton. The U.S. Bureau of Mines collected five chip samples from the area of these deposits that contained 0.09 to 3.4 ppm gold and 0.1 to 1.3 ppm silver; two grab samples contained 4.85 and 45.62 ounces of gold and 1.0 to 1.7 ounces of silver per ton. Six other samples contained as much as 9 ppm gold (Pickthorn, 1982).

These deposits are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by

Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The veins were developed by three adits and more than 2,000 feet of underground workings (Johnson, 1915; Cobb, 1979 [OFR 79-1241]; Jansons and others, 1984).

Production notes:

A mill was installed on site, and the total reported production between 1911 and 1922, was 1,997 ounces of gold and 187 ounces of silver, from 1,560 tons of ore (Hoekzema and others, 1986). The average grade indicated by this production is about 1.3 ounces of gold per ton.

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others,

1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Pickthorn, 1982; Jansons and others, 1984; Hoekzema and others, 1986; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Hoekzema and others, 1986

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Curly Kidney

Site type: Prospect

ARDF no.: VA102

Latitude: 61.0092 **Quadrangle:** VA A-7

Longitude: 146.6014

Location description and accuracy:

This prospect is on the crest of a north-northwest trending ridge, about 1 mile southeast of a small bay on the south side of Jack Bay. It is at an elevation of 1,500 feet in the NW1/4 section 14, T. 10 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 39 of Cobb and Matson (1972) and locality 31 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing quartz veins occur in shear zones that cut metaflysch of the Valdez Group at this locality (Johnson, 1919; Winkler and others, 1981 [OFR 80-892-A]). The shear zones are as much as 10 feet wide and include as much as 3 feet of quartz stringers and lenses. The quartz contains pyrite and arsenopyrite. One shear was explored with at 25-foot-long adit (Johnson, 1919). The quartz veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Inactive

Workings/exploration:

One shear was explored with at 25-foot-long adit (Johnson, 1919).

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1919; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Johnson, 1919

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Midas; Granby Consolidated Mining, Smelting, And Power Co.

Site type: Mine

ARDF no.: VA103

Latitude: 61.0132 **Quadrangle:** VA A-7

Longitude: 146.2798

Location description and accuracy:

The Midas mine is on the west side of Solomon Gulch, about 1.3 miles south of Solomon Lake. The location of this mine by name is shown on the USGS Valdez A-7 topographic map (1996). This is also the location of the Jumbo Lode claim. The All American Lode claim is shown on this map as a shaft, one-half mile southeast of the Midas mine adit. This is locality 40 of Cobb and Matson (1972) and locality 32 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag, Au, Pb, Zn

Ore minerals: Chalcopyrite, galena, pyrite, pyrrhotite, sphalerite

Gangue minerals: Quartz, calcite

Geologic description:

Crudely stratiform massive vein and disseminated replacement deposits containing pyrite, pyrrhotite, chalcopyrite, and sphalerite occur in slate and metagraywacke of the Upper Cretaceous Valdez Group (Johnson, 1915; 1919; Rose, 1965). The mineralized zones are rich in quartz and pyrite. They are locally remobilized along fractures to form cross-cutting, polymetallic sulfide-bearing, quartz-calcite veins and fracture fillings. The deposits are generally restricted to shear zones that strike N76W to S62W and dip 40 to 70 degrees north. The Jumbo lode ranged from a few inches to 20 feet in thickness and averaged 3 to 4 feet of ore width in a shear zone about 1000 feet long. The All-American lode is wider but of lower grade. Production from this mine was from the Jumbo lode and totaled more than 3,000,000 pounds of copper (Rose, 1965). In 1917, 21,000 tons of ore averaged 4.15 percent copper, 0.42 ounce of silver per ton, and 0.062 ounce of gold per ton. In 1918, 25,350 tons of shipped ore averaged 3.24 percent copper, 0.25 ounce of silver per ton,and 0.05 ounce of gold per ton. U.S. Bureau of Mines chip samples contained 0.11 to 6.3 percent copper, 0.26 to 3.1 percent zinc, less than 0.005 to 0.66 ounce of gold per ton, and less than 0.2 to 0.6 ounce of silver per ton (Jansons and others, 1984).

The All American lode was discovered in 1901 and the Jumbo lode in 1906. Most production occurred from 1911 to 1919. The Jumbo lode was developed on four levels through at least 650 feet of vertical extent; the underground workings aggregated about 4,000 feet in length. Only the 600-foot-long third-level adit was not caved in 1964 (Rose, 1965). The All-American lode was explored with a shallow shaft and open cuts. More recent exploration has occurred and may have included drilling (Cobb, 1979 [OFR 79-1241]).

The country rocks are mostly slate and metagraywacke but some mafic greenstone bodies are locally present and some felsic dikes cut the metamorphic rocks (Johnson, 1915). The mafic rocks have been described as intrusive into the metasedimentary rocks. The rocks include siliceous schist (Grant, 1906) and quartzite (Johnson, 1919); sedimentary features are well developed in ore from this deposit (Crowe and others, 1992). The deposits are considered to be submarine volcanogenic in origin (Winkler and others, 1981 [OFR 80-892-B]; Crowe and others, 1992).

Alteration:

Silicification, the mineralized zones are rich in quartz and pyrite.

Age of mineralization:

Late Cretaceous, the age of the enclosing sedimentary rocks of the Valdez Group.

Deposit model:

Besshi massive sulfide deposit (Cox and Singer, 1986; model 24b)

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

24b

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The All American lode was discovered in 1901 and the Jumbo lode in 1906. Most production occurred from 1911 to 1919. The Jumbo lode was developed on four levels through at least 650 feet of vertical extent; the underground workings aggregated about 4,000 feet in length. Only the 600-foot-long third-level adit was not caved in 1964 (Rose, 1965). The All-American lode was explored with a shallow shaft and open cuts. More recent exploration has occurred and may have included drilling (Cobb, 1979 [OFR 79-1241]).

Production notes:

Between 1911 and 1919, the Jumbo lode produced 3,385,000 pounds of copper, 2,569 ounces of gold, and 15,157 ounces of silver (Rose, 1965). This production was from 49,350 tons of ore. In 1917, 1,000 tons of ore averaged 4.15 percent copper, 0.42 ounce of silver per ton, and 0.062 ounce of gold per ton. In 1918, 25,350 tons of ore averaged 3.24 percent copper, 0.25 ounce of silver per ton,and 0.05 ounce of gold per ton.

Reserves:

Rose (1965) estimated that the reserves at the Midas mine are about 60,000 tons of material that contains 1.6 percent copper.

Additional comments:

References:

Grant, 1906; Johnson, 1915; Johnson, 1919; Rose, 1965; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Crowe and others, 1992.

Primary reference: Rose, 1965

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Jack Bay)

Site type: Prospect

ARDF no.: VA104

Latitude: 61.0279 **Quadrangle:** VA A-7

Longitude: 146.5533

Location description and accuracy:
This prospect is within Jack Bay State Marine Park; it is on the west-facing slope of the ridge in the center of the east side of the park. It is at an elevation of about 400 feet in the SE1/4 section 1, T. 10 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 38 of Cobb and Matson (1972) and locality 30 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu, Zn

Other:

Ore minerals: Chalcopyrite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Quartz

Geologic description:
Slate inclusions in greenstone of the Valdez Group contain pyrite, pyrrhotite, chalcopyrite and sphalerite (Johnson, 1919). The deposit was explored by a 25-foot adit. It may be a submarine volcanogenic deposit, similar to the deposit at the Midas mine (VA103).

Alteration:

Age of mineralization:
Late Cretaceous, the age of the Valdez Group host rocks (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:
Besshi massive sulfide deposit? (Cox and Singer, 1986; model 24b)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
24b?

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored by a 25-foot adit.

Production notes:

Reserves:

Additional comments:

References:
Johnson, 1919; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Johnson, 1919

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (north of Jack Bay)

Site type: Prospect

ARDF no.: VA105

Latitude: 61.0489 **Quadrangle:** VA A-7

Longitude: 146.5845

Location description and accuracy:

This prospect is on the south side of the ridge between Jack Bay and Port Valdez. It is near a small cirque lake about 1,500 feet above Jack Bay at an elevation of about 1,700 feet in the NE1/4 section 35, T. 9 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 37of Cobb and Matson (1972) and locality 29 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Pb, Zn

Other: Cu

Ore minerals: Arsenopyrite, galena, pyrite, pyrrhotite, sphalerite

Gangue minerals: Calcite, quartz

Geologic description:

A mineralized shear zone in metagraywacke of the Valdez Group contains disseminated arsenopyrite, chalcopyrite, pyrrhotite, sphalerite, and galena (Johnson, 1919; Winkle, Miller, and others, 1981; Winkler and others, 1981 [OFR 80-892-A]). Quartz and calcite accompany the sulfide minerals in the shear zone, which is 2 to 4 feet wide, trends N 10 E, and dips 70 degrees west. A 40-foot-long adit explored this deposit. Four grab samples from the prospect area contained 10 to 190 ppm copper, 810 ppm to 0.15 percent zinc, and 0.13 to 0.18 percent lead (Jansons and others, 1984).

Alteration:

Silicification?; the sulfide minerals are accompanied by quartz and calcite.

Age of mineralization:

Late Cretaceous or Tertiary; the mineralized shear zone cuts Upper Cretaceous rocks of the Valdez Group.

Deposit model:

Mineralized shear zone in metaflysch

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was explored with a 40-foot long adit (Johnson, 1919).

Production notes:

Reserves:

Additional comments:

References:
Johnson, 1919; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984.

Primary reference: Johnson, 1919

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Patten Mining Co.; Golden; Happy Days

Site type: Prospect

ARDF no.: VA106

Latitude: 61.0734 **Quadrangle:** VA A-7

Longitude: 146.4035

Location description and accuracy:

This prospect is on the west side of lower Sawmill Creek valley, about eight-tenths of a mile south of the shoreline near the Trans-Alaska oil pipeline terminal. It is at an elevation of about 1,200 feet in the SW1/4 section 24, T. 9 S., R. 7 W., of the Copper River Meridian. This prospect is approximately located, perhaps to within one-quarter mile. This is locality 77 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A 160-foot adit was driven in 1917 on gold-bearing quartz veins that cut metaflysch of the Valdez Group at this locality (Johnson, 1919). These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

A 160-foot adit was reported to have been driven in 1917 on gold-bearing quartz veins that cut metaflysch of the Valdez Group at this locality (Johnson, 1919). These deposits may have been restaked as the Golden and Happy Sys claims in 1954 (Mulligan, 1974).

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1919; Mulligan, 1974; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1919

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Cliff

Site type: Mine

ARDF no.: VA107

Latitude: 61.1245 **Quadrangle:** VA A-7

Longitude: 146.5545

Location description and accuracy:

The Cliff mine is on the north shore of Port Valdez, just east of the spit on the east side of the mouth of Shoup Bay. The mine is located on the USGS Valdez A-7 topographic map (1996). It is locality 18 of Cobb and Matson (1972) and locality 15 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Ag, Au

Other: Pb, Zn

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

Gangue minerals: Albite, carbonate minerals, chlorite, quartz, sericite

Geologic description:

The Cliff is one of the major mines in the Valdez area. A system of linked gold-bearing veins cut metaflysch of the Valdez Group here. Individual veins are an inch to 5 feet in thickness and occur in faulted zones with gouge and slickensides, particularly along the footwall (Grant and Higgins, 1910; Johnson, 1915). The veins enclose lenticular masses of country rock and have offshoots of quartz stringers into the hanging wall. The quartz is bluish and banded in places; other gangue minerals include calcite, albite, chlorite, and an unidentified carbonate mineral. Ore commonly contained 3 to 5 percent sulfide minerals, including pyrite, galena, sphalerite, arsenopyrite, and stibnite. The vein system strikes northwest and dips moderately both north and south. It can be traced for more than 1,700 feet along strike and more than 700 feet of vertically, from 442 feet above sea level to 332 feet below sea level (Johnson, 1915; Moffit, 1954). The Cliff mine was developed by more than 8,000 feet of underground workings on 10 levels. The veins were worked over about 775 feet of dip length (Jansons and others, 1984). Deeper levels were commonly flooded during non-operating periods. Production was principally between 1910 and 1918 and between 1936 to 1942, when it closed in response to Public Law 208 (Hoekzema and others, 1986). Total production at the Cliff mine was 51,740 ounces of gold and 8,153 ounces of silver from 29, 695 tons of ore (Hoekzema and others, 1986). The average grade indicated by this production was about 1.7 ounces of gold per ton, con-

sistent with early reports (Grant and Higgins, 1910).

These deposits are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

The deposit is variably oxidized to a depth of 100 feet. Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; medium

Site Status: Undetermined

Workings/exploration:

The Cliff mine vein system was traced for over 1,700 feet along strike land over 700 feet vertically, from 442 feet above sea level to 332 feet below sea level (Johnson, 1915; Moffit, 1954). It was developed by more than 8,000 feet of underground workings on 10 levels. Deeper levels were commonly flooded during non-operating periods. The facilities of the Cliff mine were obliterated by the tsunami that accompanied the Good Friday earthquake of March 27, 1964; the runup of this wave reached an elevation of 170 feet at the site of the Clff mine (Coulter and Migliaccio (1966).

Production notes:

Production was principally between 1910 and 1918 and between 1936 to 1942 when it closed in response to Public Law 208 (Hoekzema and others, 1986). Total production at

the Cliff mine was 51,740 ounces of gold and 8,153 ounces of silver from 29, 695 tons of ore (Hoekzema and others, 1986). The average grade indicated by this production was about 1.7 ounces of gold per ton, consistent with early reports (Grant and Higgins, 1910).

Reserves:

Additional comments:

References:

Grant and Higgins, 1910; Johnson, 1915; Moffit, 1954; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hoekzema and others, 1986; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Hoekzema and others, 1986

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Bluebird; Whistler

Site type: Prospect

ARDF no.: VA108

Latitude: 61.1260 **Quadrangle:** VA A-7

Longitude: 146.6160

Location description and accuracy:

This prospect is on the southwest flank of the ridge west of the mouth of Shoup Bay; it is at an elevation of about 600 feet below the center of S1/2 section 35, T. 8 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 15 of Cobb and Matson (1972) and locality 9 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb

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

Gangue minerals: Calcite, chlorite, quartz, white mica

Geologic description:

A 4- to 10-foot-thick shear zone with lenticular, shattered mafic dike fragments is cemented with an irregular network of mineralized quartz at the Bluebird prospect (Johnson, 1915). On the Whistler claim, a quartz vein and with fragments of silicified slate contain pyrite and free gold (Brooks, 1912). The shear zone is in metaflysch of the Valdez Group. In the shear zone the quartz is accompanied by calcite, chlorite, pyrrhotite, chalcopyrite, galena, and pyrite (Johnson, 1915); Brooks (1912) reported that gold is present. Two adits, one 10 and one 100 feet long, and a short drift explored the Bluebird prospect by 1914; total underground workings were more than 125 feet long. These deposits are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-froming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb

and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Two adits, one 10 and one 100 feet long, and a short drift explored the Bluebird prospect by 1914; the total underground workings were more than 125 feet long (Johnson, 1915).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Alaska Gold Hill; Black Diamond

Site type: Prospect

ARDF no.: VA109

Latitude: 61.1300 **Quadrangle:** VA A-7

Longitude: 146.5173

Location description and accuracy:

This prospect is on a bench along the north side of Port Valdez about eight-tenths of a mile west of Camp Bowie; it is at an elevation of about 450 feet in the SE1/4 of section 32, T. 8 S., R. 7 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 20 of Cobb and Matson (1972) and locality 17 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

Two shear zones, 0.5 inch to 4 feet thick, contain crushed country rock and quartz veinlets in metaflysch of the Valdez Group (Jansons and others, 1984). The mineralized zones are assumed to be gold-bearing (Cobb, 1979 [OFR 79-1241]; Winkler, Miller, and others, 1981). Three adits, one 50 feet long with a 75-foot-long crosscut and 55-foot-long drift, one 120feet long, and one 605 feet long, were present (Johnson, 1919). This deposit is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Three adits were driven to explore this deposit: one 50 feet long with a 75-foot-long crosscut and 55-foot-long drift, one 120 feet long, and one 605 feet long (Johnson, 1919).

Production notes:

There is no reported production from this deposit (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1919; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Jansons and others, 1984

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Sealy-Davis; Gold Bluff

Site type: Mine

ARDF no.: VA110

Latitude: 61.1277 **Quadrangle:** VA A-7

Longitude: 146.5713

Location description and accuracy:

This prospect is about 500 feet east of Shoup Bay and one-third mile northwest of the Cliff mine (VA107); it is at an elevation of about 300 feet in the SE1/4 section 36, T. 8 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 15 of Cobb and Matson (1972) and locality 12 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite, pyrrhotite, sphalerite

Gangue minerals: Calcite, chlorite, quartz, white mica

Geologic description:

A gold-bearing quartz vein cuts metaflysch of the Valdez Group. The vein is 2 to 3.5 feet thick, strikes northwest, and dips from 60 to 85 degrees south (Johnson, 1915; Smith, 1917). It contains gold, pyrite, arsenopyrite, chalcopyrite, sphalerite, galena, and pyrrhotite. On the Gold Bluff claim, a shear zone with 4-inch-wide quartz lenses and thinner quartz stringers contains calcite, chlorite, pyrite, pyrrhotite, and chalcopyrite (Johnson, 1915). The Gold Bluff deposit was explored by 200-foot adit by 1914. The Sealy-Davis deposit was explored and developed by open cuts and over 1,500 feet of underground workings on four levels. Smith (1917) indicated the workings included adits, raises, winzes, drifts, and stopes over a vertical extent of as much as 450 feet. At least two ore shipments were made by 1915, but the total reported production is only 38 ounces of gold (Jansons and others, 1984). The U.S. Bureau of Mines collected 15 chip samples from three adits that contained 0.1 to 7.9 ppm gold and less than 0.1 to 1.6 ppm silver; one selected grab sample contained 17 ppm gold and 2.8 ppm silver (Jansons and others, 1984).

These deposits are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and

formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The Gold Bluff deposit was explored by 200-foot adit by 1914. The Sealy-Davis deposit was explored and developed by open cuts and more than 1,500 feet of underground workings on four levels. Smith (1917) indicated that the workings included adits, raises, winzes, drifts, and stopes over a vertical extent of 450 feet.

Production notes:

The total reported production from the Sealy-Davis mine is 38 ounces of gold (Jansons and others, 1984).

Reserves:

Janson and others (1984) estimate inferred reserves at the Sealy-Davis mine of 50 tons of material containing 7.9 ppm of gold and 1.6 ppm of silver.

Additional comments:

References:

Johnson, 1915; Smith, 1917; Cobb and Matson, 1972; Winkler and others, 1981 (OFR

80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Cube; Three-In-One

Site type: Mine

ARDF no.: VA111

Latitude: 61.1360 **Quadrangle:** VA A-7

Longitude: 146.5523

Location description and accuracy:

This mine is about one-half mile east of Shoup Bay and one-third mile southwest of peak 2733; it is at an elevation of about 1,500 feet in the NW1/4 section 31, T. 8 S., R. 7 W., of the Copper River Meridian. This mine is probably located to within one-quarter mile. It is locality 17 of Cobb and Matson (1972) and locality 14 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

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

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

A gold-bearing quartz vein cuts metaflysch of the Valdez Group at the Cube mine (Johnson, 1915). The mineralized zone trends northwest, dips from 50 degrees south to vertical, and is reported to have been traced for a few thousand of feet of strike length. The quartz vein varies from 3 to 10 feet thick, averages about 2 feet in thickness, and contains gold, arsenopyrite, galena, chalcopyrite, and sphalerite (Johnson, 1915). This deposit was developed by two adits, one 900 feet long and one 400 feet long, that were connected by a 160-foot raise. The Cube mine produced 73 ounces of gold (Jansons and others, 1984). A U.S. Bureau of Mines grab sample from this area contained 0.031 ounce of gold per ton and 2.1 ounces of silver per ton (Jansons and others, 1984).

The Cube vein is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devola-

tization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

This deposit was developed by two adits, one 900 feet long and one 400 feet long, that were connected by a 160-foot raise.

Production notes:

The Cube mine produced 73 ounces of gold (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Alice

Site type: Mine

ARDF no.: VA112

Latitude: 61.1359 **Quadrangle:** VA A-7

Longitude: 146.6085

Location description and accuracy:

This mine is near the mouth of McAllister Creek on Shoup Bay (Pickthorn, 1982, sheet 2); it is at an elevation of about 100 feet in the NE1/4 section 35, T. 8 S., R. 8 W., of the Copper River Meridian. This mine is located to within one-quarter mile. It is locality 13 of Cobb and Matson (1972) and locality 10 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, limonite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A shear zone, commonly about 0.5 to 2 feet thick but locally as much as 6 feet thick, cuts metaflysch of the Valdez Group; the zone contains quartz-chlorite-calcite veinlets with gold, pyrite, chalcopyrite, arsenopyrite, sphalerite, and galena (Johnson, 1915). Brecciated country rocks in the shear zone are silicified and cemented with pyritiferous quartz (Brooks, 1912). The mineralized zone, which strikes about N60W and dips 70S, is traceable on the surface for as much as 1,100 feet. By 1916, a 250-foot adit with a raise and a 170-foot shaft with two 50-foot drifts at the bottom explored the deposit. A few small ore shipments, including 30 tons in 1912, were made from this mine. U.S. Bureau of Mines sampling included four chip samples that contained from 0.2 ppm to 0.109 ounce of gold per ton and from 0.2 ppm to 0.18 ounce of silver per ton, and two grab samples that contained 0.005 and 0.257 ounce of gold per ton and less than 0.2 and 0.2 ounce of silver per ton. Eleven other samples from this area contained 0.4 to 16 ppm gold (Pickthorn, 1982).

This deposit is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain

pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The mineralized zone was reported to be traceable on the surface for as much as 1,100 feet. By 1916, a 250-foot adit with raise and a 170-foot shaft with two 50-foot drifts at the bottom explored the deposit.

Production notes:

A few small ore shipments, including 30 tons in 1912, were made from this mine.

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Silver Gem; I.X.L.; Shoup Bay Mining Co.; Spanish

Site type: Mine

ARDF no.: VA113

Latitude: 61.1382 **Quadrangle:** VA A-7

Longitude: 146.6232

Location description and accuracy:

This mine is on the ridge between McAllister and Palmer Creeks, on the west side of Shoup Bay; it is at an elevation of about 600 feet on the northeast side of the ridge in the NW1/4 section 35, T. 8 S., R. 8 W., of the Copper River Meridian. This mine is probably located to within one-quarter mile. It is locality 11 of Cobb and Matson (1972) and locality 8 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Pb, Sb, Zn

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

Gangue minerals: Calcite, chlorite, quartz, sericite

Geologic description:

Shear zones that contain crushed and brecciated country rock and gold-bearing quartz bodies from a few inches to a few feet wide cut metaflysch of the Valdez Group on these claims (Brooks, 1912). In places the breccia is cemented by quartz and pyrite. At least locally, the shear zones include galena, arsenopyrite, sphalerite, and stibnite. There is at least a 500-foot-long adit on the Silver Gem deposit (Johnson, 1915).

These mineralized zones are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

There was at least a 500-foot-long adit on the Silver Gem deposit (Johnson, 1915).

Production notes:

Ore shipments are reported from the Silver Gem deposit to a custom mill in Valdez (Johnson, 1915).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Gold Creek

Site type: Mine

ARDF no.: VA114

Latitude: 61.1415 **Quadrangle:** VA A-7

Longitude: 146.4745

Location description and accuracy:
Placer mining took place locally on Gold Creek, probably at least one-half mile upstream from its mouth on Port Valdez. The site is plotted on the creek at an elevation of 750 feet on the boundary between sections 27 and 28, T. 8 S., R. 7 W., of the Copper River Meridian. This mine is probably located to within one-half mile. It is locality 75 of Cobb and Matson (1972) and locality 62 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
The stream gravels of Gold Creek, which were reported to be as much as 50 feet thick in places, contain small amounts of placer gold (Brooks, 1914). Small-scale placer mining, including attempts at hydraulic operations, occurred at several locations along this creek from about 1906 to 1915 (Cobb, 1979 [OFR 79-1241]). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

39a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale placer mining, including attempts at hydraulic operations, occurred at several locations along this creek from about 1906 to 1915 (Cobb, 1979 [OFR 79-1241]).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1914; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Cobb, 1979 (OFR 79-1241)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Guthrie and Belloli

Site type: Prospect

ARDF no.: VA115

Latitude: 61.1470 **Quadrangle:** VA A-7

Longitude: 146.5545

Location description and accuracy:

This prospect is on the southwest side of Uno Basin, about seven-tenths of a mile northwest of peak 2733; it is at an elevation of about 1,800 feet in the NW1/4 section 30, T. 8 S., R. 7 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 16 of Cobb and Matson (1972) and locality 13 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite

Gangue minerals: Calcite, chlorite, quartz, sericite

Geologic description:

A gold-bearing quartz vein from 1 to 10 feet thick cuts sheared metaflysch of the Valdez Group (Johnson, 1915). The quartz vein contains calcite, chlorite, pyrite, chalcopyrite, arsenopyrite, sphalerite, and galena. The vein was traced on the surface for about 100 feet and explored by a 140-foot-long adit, a 90-foot-long crosscut, and 50 feet of drifts (Johnson, 1915; Jansons and others, 1984). Four U.S. Bureau of Mines grab samples from this area contained as much as 1.5 ppm gold and 19 ppm silver (Jansons and others, 1984). This vein is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

The vein was traced on the surface for about 100 feet and explored by a 140-foot-long adit, a 90-foot-long crosscut, and 50 feet of drifts (Johnson, 1915; Jansons and others, 1984).

Production notes:

Production has not been reported from this deposit (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Thompson-Ford; Owl

Site type: Mine

ARDF no.: VA116

Latitude: 61.1473 **Quadrangle:** VA A-7

Longitude: 146.5205

Location description and accuracy:

This mine is in the upper Uno Basin about 1.5 miles southeast of Mount Shasta (Pickthorn, 1982, sheet 2); it is at an elevation of about 2,700 feet in the NW1/4 section 29, T. 8 S., R. 7 W., of the Copper River Meridian. This mine is probably located to within one-quarter mile. It is locality 19 of Cobb and Matson (1972) and locality 16 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, limonite, malachite, pyrite

Gangue minerals: Calcite, chlorite, quartz, sericite

Geologic description:

The Thompson-Ford deposit is a shear zone in metaflysch of the Valdez Group that contains gold-bearing quartz veins as mush as 1.5 feet thick (Johnson, 1915). The quartz veins contain calcite, pyrite, galena, chalcopyrite, and sphalerite. This mineralized zone strikes northwest and dips vertically. It was traced for 115 feet on the surface and developed by about 735 feet of underground workings, including a shaft, adit, crosscuts, and drifts (Johnson, 1915; Jansons and others, 1984). The Owl deposit consists of a shear zone with quartz stringers and lenses as much as 1.5 feet thick that strikes northwest and dips 30 degrees north in metaflysch of the Valdez Group (Johnson, 1915). The quartz also contains calcite, chlorite, limonite, malachite, pyrite, chalcopyrite, galena, and sphalerite. This deposit was explored by about 190 feet of underground workings by 1914 (Johnson, 1915). Ore shipments were made to the Tacoma smelter from the Thompson-Ford deposit, but the production has not been reported (Johnson, 1915; Jansons and others, 1984). Three U.S. Bureau of Mines chip samples from this area contained 0.4 to 0.59 ppm gold and 0.2 ppm silver; five grab samples contained as much as 5.02 ppm gold and as much as 3.1 ppm silver (Jansons and others, 1984).

These deposits are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by

Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The Owl deposit was explored with about 190 feet of underground workings by 1914 (Johnson, 1915). The Thompson-Ford deposit was traced for a length of 115 feet on the surface and developed by about 735 feet of underground workings, including a shaft, adit, crosscuts, and drifts (Johnson, 1915; Jansons and others, 1984).

Production notes:

Ore shipments were made to the Tacoma smelter from the Thompson-Ford deposit but the production has not been reported (Johnson, 1915; Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B);

Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Seacoast; Bunker Hill

Site type: Prospect

ARDF no.: VA117

Latitude: 61.1568 **Quadrangle:** VA A-7

Longitude: 146.5762

Location description and accuracy:

This prospect is eight-tenths of a mile south-southwest of Mount Shasta and about one-quarter mile north of lower Uno Creek; it is at an elevation of about 2,000 feet in the SE1/4 section 24, T. 8 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 14 of Cobb and Matson (1972) and locality 11 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, limonite, malachite, pyrite

Gangue minerals: Calcite, chlorite, quartz, sericite

Geologic description:

The Seacoast deposit consists of several gold-bearing quartz veins and lenses that cut metaflysch of the Valdez Group (Johnson, 1915). The quartz bodies range from an inch to 11 feet thick, but most are thin. They contain
pyrite, galena, free gold, pyrrhotite, chalcopyrite, sphalerite, carbonate, chlorite, limonite, and malachite. Two adits, raises, winzes, and drifts totaling about 725 feet of length explored the Seacoast deposit ,although only one test shipment of ore has been reported (Cobb, 1979 [OFR 79-1241]). The Bunker Hill deposit is a 4- to 25-inch-thick quartz vein in Valdez Group metaflysch that has been explored with a 100-foot-long adit (Johnson, 1915). This vein is reported to contain arsenopyrite, galena, pyrite, sphalerite, and limonite in a gangue of quartz, calcite, and chlorite. The U.S. Bureau of Mines collected four chip samples in this area that contained as much as 1.29 ppm gold and 2.0 ppm silver (Jansons and others, 1984).

These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4,

N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

The Seacoast vein was explored by two adits, raises, winzes, and drifts totaling about 725 feet of length (Cobb, 1979 [OFR 79-1241]), although only one test shipment of ore has been reported. The Bunker Hill deposit has been explored with a 100-foot-long adit (Johnson, 1915).

Production notes:

There is no reported production from these deposits (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1984

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Alaskan

Site type: Prospect

ARDF no.: VA118

Latitude: 61.1805 **Quadrangle:** VA A-7

Longitude: 146.3127

Location description and accuracy:

This prospect is one-quarter mile west of upper Wood Creek at an elevation of 2,500 feet. The location is shown of the USGS Valdez A-7 topographic map with a shaft symbol. It is in about the center of the N1/2 section 16, T. 8 S., R. 6 W., of the Copper River Meridian. It is locality 27 of Cobb and Matson (1972) and locality 22 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, limonite, pyrite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A gold-bearing quartz vein, 6 inches to 5 feet thick, that can be traced for 150 feet in outcrop cuts metaflysch of the Valdez Group (Johnson, 1916). The vein contains pyrite, galena, sphalerite, chalcopyrite and free gold. A short shaft and adit explored this deposit. Another vein 200 feet from the main vein may be another vein or a continuation of the main vein. These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

A short shaft and adit explored this deposit.

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1916; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1916

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mineral Creeks

Site type: Mine

ARDF no.: VA119

Latitude: 61.1417 **Quadrangle:** VA A-7

Longitude: 146.3609

Location description and accuracy:
Placer mining has taken place at various locations on Mineral Creek upstream from the town of Valdez for at least 4.5 miles (Winkler and others, 1981 [OFR 80-892-B], locality 63). The coordinate location used here are on the north side of Valdez at the placer locality shown by Cobb and Matson (1972, locality 77).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Low-grade placer gold deposits have been mined intermittently on Mineral Creek at various locations upstream from Valdez from before 1898 to at least 1914 (Cobb, 1972 [OFR 79-1241]). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins that may contribute to this placer are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale placer gold mining and perhaps more extensive prospecting has occurred along Mineral Creek for about 4.5 miles upstream from Valdez.

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Cobb, 1979 (OFR 79-1241)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): High Grade; Golden Sunlight

Site type: Mine

ARDF no.: VA120

Latitude: 61.1940 **Quadrangle:** VA A-7

Longitude: 146.3404

Location description and accuracy:

This prospect, locality 26 of Cobb and Matson (1972), is near Mineral Creek about one-third mile north of the mouth of Wood Creek in section 8, T. 8 S., R. 6 W., of the Copper River Meridian. It is approximately located, perhaps within 1 mile.

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, limonite, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Iron-stained and gold-bearing quartz veins in shear zones cut metaflysch of the Valdez Group (Brooks, 1912; Johnson, 1915). The 2- to 3-foot-thick shear zones contain quartz-carbonate veins that are less than 3 inches thick. The veins contain pyrite and galena (Johnson, 1915). Two adits, one 60 feet long and the other 140 feet long in 1914, explored these veins (Johnson, 1915). These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Oxidation; the quartz veins are iron-stained. Country rocks to gold-bearing quartz veins

in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Two adits, one 60 feet long and the other 140 feet long in 1914, explored these deposits (Johnson, 1915).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): 45

Site type: Prospect

ARDF no.: VA121

Latitude: 61.2086 **Quadrangle:** VA A-7

Longitude: 146.3473

Location description and accuracy:

This prospect is on the north side of the ridge between Brevier and Mineral Creeks at an elevation of about 2,400 feet in the NW1/4 section 5, T. 8 S., R. 6 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 25 of Cobb and Matson (1972) and locality 21 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

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

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Thin gold-bearing quartz veins cut metaflysch of the Valdez group at this locality (Johnson, 1916). Fracture-filling veins in metagraywacke strike northwest and dip 70 degrees north. The veins are 1 to 6 inches thick and contain free gold, galena, sphalerite, and chalcopyrite. A 20-foot adit and an open cut explored this deposit in 1913 (Johnson, 1916). These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

A 20-foot adit and an open cut explored this deposit in 1913 (Johnson, 1916).

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1916; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1916

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Blue Ribbon

Site type: Prospect

ARDF no.: VA122

Latitude: 61.2084 **Quadrangle:** VA A-7

Longitude: 146.2645

Location description and accuracy:

This prospect is located on the south side of a west-trending glacier lobe, about one-quarter mile east of elevation 4030; it is at an elevation of about 3,800 feet in the NW1/4 section 2, T. 8 S., R. 6 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 31 of Cobb and Matson (1972) and locality 24 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A gold-bearing quartz vein, from a few inches to 8 inches thick and that locally including ribbon quartz zones as much as 8 inches thick, cuts metaflysch of the Valdez Group at this prospect (Brooks, 1912). The vein strikes east-west, parallel to the foliation in the host rocks. It has been traced over a distance of 1,000 feet along strike, an exceptionally long distance for quartz veins in the area. This vein is probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:

This vein was probably explored with small trenches and open cuts.

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Brooks, 1912

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Rambler; Rambler Gold Mining Co.

Site type: Prospect

ARDF no.: VA123

Latitude: 61.2074 **Quadrangle:** VA A-7

Longitude: 146.6222

Location description and accuracy:

This prospect is about 1.3 miles southeast of Mount Cameron. It is at an elevation of about 3,400 feet in the center of W1/2 section 2, T. 8 S., R. 8 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 5 of Cobb and Matson (1972).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, sericite

Geologic description:

A gold-bearing, mineralized fault zone that averages about 1.5 feet in width cuts metaflysch of the Valdez Group (Jansons and others, 1984). The deposit was explored by two short shafts, a 227-foot long adit, and five trenches. At least one test shipment of ore was made in 1916 (Johnson, 1918). The U.S. Bureau of Mines collected three chip samples that contained as much as 0.64 ppm gold and 0.3 ppm of silver. This deposit is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

The deposit was explored by two short shafts, a 227-foot long adit, and five trenches; the total length of underground workings is about 400 feet (Cobb, 1979 OFR 79-1241]).

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1918; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Jansons and others, 1984

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Williams Gentzler; Ethel Mining Co.; Cash

Site type: Mine

ARDF no.: VA124

Latitude: 61.2170 **Quadrangle:** VA A-7

Longitude: 146.2681

Location description and accuracy:
This mine is on the south side of the glacier at the head of Glacier Creek. It is identified on the USGS Valdez A-7 topographic map (1996) as the Cash mine with an adit symbol. It is locality 30 of Cobb and Matson (1972).

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, pyrite, pyrrhotite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:
A gold-bearing quartz vein, 18 to 24 inches thick, cuts metaflysch of the Valdez Group (Brooks, 1912; Johnson, 1915) at this site. Sulfide minerals include pyrrhotite, pyrite, and galena (Johnson, 1915). One grab sample contained 0.24 ounce of gold per ton and and 6.8 ounces of silver per ton (Jansons and others, 1984). By 1915, the mine was developed by about 100 feet of underground workings, including a 30-foot drift along the vein that exposed a 25- to 30-foot-long ore shoot (Johnson, 1915). An arrastre was constructed, and some concentrate was recovered from riffles. Some efforts to redevelop this mine occurred in the late 1920's (Cobb, 1979 [OFR 79-1241]); the total length of underground workings is about 245 feet (Jonsons and others, 1984). This vein is probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

By 1915, the mine was developed by about 100 feet of underground workings, including a 30-foot drift along the vein that exposed a 25- to 30-foot-long ore shoot (Johnson, 1915). An arrastre was constructed, and some concentrate was recovered from riffles. Some efforts to redevelop this mine occurred in the late 1920's (Cobb, 1979 [OFR 79-1241]); the total length of underground workings is about 245 feet (Jansons and others, 1984).

Production notes:

An arrastre was constructed, and some concentrates were recovered from the riffles. Some efforts to redevelop this mine occurred in the late 1920's (Cobb, 1979 [OFR 79-1241]).

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Little Giant; Mountain King; Rose; July; Star; H.L. Jaynes Group; Poys; Giant

Site type: Mine

ARDF no.: VA125

Latitude: 61.2166 **Quadrangle:** VA A-7

Longitude: 146.2944

Location description and accuracy:

This mine is on the south side of Glacier Creek. It is marked as the Giant mine on the USGS Valdez A-7 topographic map (1996) and located with an adit symbol. It is locality 29 of Cobb and Matson (1972) and locality 23 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, limonite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing quartz veins cut metaflysch of the Valdez Group at this locality. The veins, which are from an inch to 4 feet in thickness, are semi-parallel to the foliation in the country rock (Johnson, 1915). They contain free gold, carbonate, chalcopyrite, pyrite, galena, sphalerite, and pyrrhotite (Johnson, 1915; Smith, 1937). Two grab samples contained 0.364 and 1.35 ounces of gold per ton and 1.4 and 5.8 ounces of silver per ton (Jansons and others, 1984). About 120 feet of underground workings and some surface stripping had been completed by 1914; several tons of ore gathered from outcrop were milled in 1914 (Johnson, 1915). Work on these deposits continued intermittently to 1937 (Cobb, 197 [OFR 79-1241]), and workings eventually included a vertical shaft, three inclined shafts, an underground mill, and a 165-foot-long adit (Smith, 1937; Jansons and others, 1984).

These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salini-

ties were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

About 120 feet of underground workings and some surface stripping had been completed by 1914; several tons of ore gathered from outcrop were milled in 1914 (Johnson, 1915). Work on these deposits continued intermittently to 1937 (Cobb, 1979 [OFR 79-1241]); the workings eventually included a vertical shaft, three inclined shafts, an underground mill, and a 165-foot-long adit (Smith, 1937; Jonsons and others, 1984).

Production notes:

The reported production from this property is 367 ounces of gold and 152 ounces of silver (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Smith, 1937; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mountain View; Hickey Property

Site type: Prospect

ARDF no.: VA126

Latitude: 61.2199 **Quadrangle:** VA A-7

Longitude: 146.3138

Location description and accuracy:

This prospect is one-quarter mile east of Smith Mill on Mineral Creek. Its location is shown on the USGS Valdez A-7 topographic map (1996) with an adit symbol. It is locality 28 of Cobb and Matson (1972).

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, limonite, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

An iron-stained, gold-bearing quartz vein with wall quartz stringers in the hanging wall, cuts metaflysch of the Valdez Group. The vein, striking about east-west and dips steeply north; it is as much as 3 feet thick but pinches down to a few inches in some places (Brooks, 1912; Johnson, 1915). Sulfides are not common but do occur in local concentrations; pyrite and some galena have been identified. The workings include a short adit and open cuts, one of which exposed the vein for 30 feet of length. This vein is probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Oxidation; the quartz vein is iron-stained. Country rocks to gold-bearing quartz veins

in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

The workings include a short adit and open cuts, one of which exposed the vein for 30 feet of length (Johnson, 1915).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Hercules; Millionaire

Site type: Mine

ARDF no.: VA127

Latitude: 61.2240 **Quadrangle:** VA A-7

Longitude: 146.3419

Location description and accuracy:

This mine is southeast of and below Johnson Glacier; it is at an elevation of about 2,900 feet seven-tenths of a mile northwest of Smith Mill on Mineral Creek. The USGS Valdez A-7 topographic map (1996) shows this mine marked by adit symbols. However, this map shows the Hercules mine to be located about 2,100 feet farther west, where the Big Four mine (VA128) is actually belived to be located. This record follows Cobb and Matson (1972, locality 22) in placing the Hercules mine at this location.

Commodities:

Main: Au

Other: Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite?, galena, gold, pyrite, pyrrhotite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing quartz veins cut metaflysch of the Valdez Group at this locality. On the Hercules claim, a quartz vein, from18 to 30 inches thick, trends N 80 E and dips 70 degrees north, approximately parallel to schistosity (Brooks, 1912). This vein was traced on the surface for about 70 feet and subsequently developed with about 500 feet of underground workings by 1916 (Johnson, 1915; 1918). Minerals identified in this vein include quartz, carbonate, chlorite, gold, pyrite, pyrrhotite, galena, sphalerite, and possibly chalcopyrite (Johnson, 1915). On the Millionaire claim, a quartz vein from 6 to 20 inches thick strikes N 60 W and dips 70 degrees north (Johnson, 1915). This vein was explored with at least two adits; the upper extended 130 feet and included some stoping and the lower extended 450 feet on a weakly mineralized shear zone (Johnson, 1915). Two U.S. Bureau of Mines chip samples from this area contained 11.8 ppm and 1.6 ounces of gold per ton and 4.2 ppm and 0.7 ounce of silver per ton (Jansons and others, 1984). Twenty-five other samples collected in this area contained from less than 0.05 to 1.5 ppm gold (Pickthorn, 1982).

These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb

and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The Hercules vein was traced on the surface for about 70 feet and subsequently developed with about 500 feet of underground workings by 1916 (Johnson, 1915, 1918). The vein on the Millionaire claim was explored with at least two adits; the upper extended 130 feet and included some stoping, the lower extended 450 feet on a weakly mineralized shear zone (Johnson, 1915).

Production notes:

The reported production from this area was 269 ounces of gold and 44 ounces of silver (Jansons and others, 1984).

Reserves:

Jansons and others (1984) gave inferred reserves for this area of 450 tons of material that contains 22.5 ppm of gold and 9.1 ppm of silver.

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Johnson, 1918; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Pickthorn, 1982; Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Big Four

Site type: Mine

ARDF no.: VA128

Latitude: 61.2213 **Quadrangle:** VA A-7

Longitude: 146.3615

Location description and accuracy:

The Big Four mine is locality 22 of Cobb and Matson (1972) and locality 19 of Winkler and others (1981 [OFR 80-892-B]). It is south of and below Johnson Glacier at an elevation of 3,200 feet, 1.1 miles west-northwest of Smith Mill on Mineral Creek. However, the USGS Valdez A-7 topographic map (1996) shows this location, marked by adit symbols, to be the Hercules mine. This record follows Cobb and Matson (1972). See also the Hercules mine (VA127).

Commodities:

Main: Au

Other: Pb, Zn

Ore minerals: Arsenopyrite, galena, gold, limonite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

An iron-stained, gold-bearing quartz vein cuts metaflysch of the Valdez Group at this locality (Brooks, 1912). The vein is as much as 5 feet thick, trends northeast, dips steeply north, and is locally offset by northerly trending faults. It contains free gold, pyrite, galena, and sphalerite (Johnson, 1915). This vein was traced for at least 200 feet; it was developed by at least two adits with a total length of 200 feet by 1914 when a mill was installed at the mine. Additional work continued intermittently to 1939 (Cobb, 1972 [OFR 79-1241]); the reported production was 846 ounces of gold and 371 ounces of silver (Jansons and others, 1984). Four U.S. Bureau of Mines grab samples contained from less than 0.03 ppm gold to 3.98 ounces of gold per ton and a trace to 1.0 ounce silver per ton (Jansons and others, 1984).

This vein is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures

ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Oxidation; the quartz vein is iron-stained. Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

This vein was traced for at least 200 feet; it was developed by at least two adits with a total length of 200 feet by 1914 when a mill was installed at the mine. Additional work continued intermittently to 1939 (Cobb, 1972 [OFR 79-1241]).

Production notes:

The reported production from this deposit was 846 ounces of gold and 371 ounces of silver (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Monte Carlo; Chesna; Sunshine

Site type: Mine

ARDF no.: VA129

Latitude: 61.2288 **Quadrangle:** VA A-7

Longitude: 146.3453

Location description and accuracy:

This mine is east of the Johnson Glacier and west of Mineral Creek. It is about nine-tenths of a mile northwest of the Smith Mill on Mineral Creek. The USGS Valdez A-7 topographic map (1996) shows this location with adit symbols and identifies it as the Big Four mine. However, this record follows Cobb and Matson (1972, locality 24), who showed this location to be the group of mines named above.

Commodities:

Main: Au

Other: Pb

Ore minerals: Arsenopyrite, galena, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

An irregular body of quartz and an offshoot vein to it (the Monte Carlo claim) and quartz veins and stockworks (the Chesna claim) cut metaflysch of the Valdez Group (Johnson, 1915). The Monte Carlo quartz vein is as much as 5 feet thick and contains free gold, pyrite, and galena. This deposit was developed by two adits, and 4 tons of ore were mined in 1913. The lower adit was driven 145 feet and did not find the quartz vein. The upper adit intersected the vein about 36 feet in from the portal (Johnson, 1915). The quartz vein on the Chesna claim is 3 to 4 feet thick on the surface but narrows underground where it merges into a stockwork zone of quartz stringers (Johnson, 1915). The Chesna deposits were developed on three levels by adits that totaled about 750 feet in length. A thin quartz vein was explored by a 25-foot adit on the Sunshine claim (Brooks, 1912).

These veins are probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation

temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The Monte Carlo deposit was developed by two adits, and 4 tons of ore were mined in 1913. The lower adit was driven 145 feet and did not find the quartz vein. The upper adit intersected the vein about 36 feet from the portal (Johnson, 1915). The Chesna deposits were developed on three levels by adits that totaled about 750 feet in length. A 25-foot adit was driven on a thin vein on the Sunshine claim (Brooks, 1912).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Solomon Gulch

Site type: Mine

ARDF no.: VA130

Latitude: 61.0303 **Quadrangle:** VA A-7

Longitude: 146.2847

Location description and accuracy:
The lower part of Solomon Gulch, now partly covered by Solomon Lake, was the site of some placer mining. The map site is the approximate midpoint of a 1-mile segment of Solomon Gulch above Solomon Lake, in section 3, T. 9 S., R. 6 W., of the Copper River Meridian. This is locality 78 of Cobb and Matson (1972) and locality 64 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Some placer gold probably occurs in Solomon Gulch but early attempts at mining were unsuccessful (Cobb, 1979 [OFR 79-1241]). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Small-scale surface prospecting and some mining attempts took place on Solomon Gulch about 1900 (Cobb, 1979 [OFR 79-1241]).

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Cobb, 1979 (OFR 79-1241)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Mineral Creek

Site type: Mine

ARDF no.: VA131

Latitude: 61.2036 **Quadrangle:** VA A-7

Longitude: 146.3173

Location description and accuracy:
This placer mine location (locality 76 of Cobb and Matson, 1972), is on Mineral Creek near the mouth of East Fork. It is approximately located, perhaps to within 1 mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Low-grade placer gold deposits have been intermittently mined at various locations on Mineral Creek from before 1898 to at least 1914 (Cobb, 1972, OFR 79-1241). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins that may have contributed to Mineral Creek placers are widespread in the Valdez Group (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale placer gold mining and perhaps more extensive prospecting has occurred at various locations along Mineral Creek.

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Cobb, 1979 (OFR 79-1241)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Fort Liscum

Site type: Prospect

ARDF no.: VA132

Latitude: 61.0820 **Quadrangle:** VA A-7

Longitude: 146.3702

Location description and accuracy:
This prospect is located near old Fort Liscum, directly south of Valdez; it is now the site of the oil terminal at the south end of the trans-Alaska oil pipeline. This is locality 87 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold claims were staked in this area in 1971 and were active at least to 1973 (U. S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). This locality is now part of the terminus facilities of the trans-Alaska oil pipeline.

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Some placer exploration may have been conducted here.

Production notes:

Reserves:

Additional comments:

References:
U.S. Bureau of Mines, 1980; Winkler and others, 1981 (OFR 80-892-B).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Orion

Site type: Prospect

ARDF no.: VA133

Latitude: 61.0026 **Quadrangle:** VA A-7

Longitude: 146.5119

Location description and accuracy:

This prospect is on the south shore of Jack Bay about one-quarter mile from its head. It is on the shoreline and very near the center of section 17, T. 10 S., R. 7 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 76 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au?

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A 1- to 10-inch-wide quartz vein, assumed to be gold-bearing, cuts metaflysch of the Valdez Group at this locality (Johnson, 1919). The vein contains arsenopyrite and pyrrohotite; it was explored by a 75-foot-long adit that is now caved (Johnson, 1919; Jansons and others, 1984). This vein is probably similar to other gold-bearing quartz veins cutting metaflysch of the Valdez Group in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:
Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: None

Site Status: Inactive

Workings/exploration:
This deposit was explored by a 75-foot-long adit that is now caved (Johnson, 1919; Jansons and others, 1984).

Production notes:

Reserves:

Additional comments:

References:
Johnson, 1919; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1919

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Addison Powell

Site type: Prospect

ARDF no.: VA134

Latitude: 61.0126 **Quadrangle:** VA A-6

Longitude: 146.0978

Location description and accuracy:

This prospect is on the north side of the valley of an unnamed south tributary to the lower Lowe River. The mouth of this tributary is 3.3 miles upstream from Canyon Slough. The prospect is at an elevation of about 1,500 feet in the center of the S1/2 section 10, T. 10 S., R. 5 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 41 of Cobb and Matson (1972) and locality 33A of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag, Au, Zn

Ore minerals: Chalcopyrite, gold, malachite, pyrite, pyrrhotite, sphalerite

Gangue minerals:

Geologic description:

Stratiform lenses and disseminations of sulfide minerals occur in mafic metavolcanic rocks and metasedimentary rocks of the Valdez Group; the sulfide minerals include chalcopyrite, pyrite, pyrrhotite, and sphalerite (Winkler, Miller, and others, 1981). Early work on this prospect described it as a large but low-grade deposit with chalcopyrite, some malachite, and a little gold. It was explored by about 150 feet of open cuts and a 100-foot-long adit (Johnson, 1916). The metavolcanic rocks probably represent ocean-floor basalts that were accreted with the flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Oxidation; the deposits are iron-stained (Winkler and others, 1981 [OFR 80-892-B]).

Age of mineralization:

Late Cretaceous; the host metavolcanic rocks probably represent ocean-floor basalts that were accreted along the enclosing flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:
Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
24a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Early work on this prospect included about 150 feet of open cuts and a 100-foot-long adit (Johnson, 1916).

Production notes:

Reserves:

Additional comments:

References:
Johnson, 1916; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Sulphide Gulch

Site type: Occurrence

ARDF no.: VA135

Latitude: 61.0170 **Quadrangle:** VA A-6

Longitude: 146.0624

Location description and accuracy:

This occurrence is apparently on an unnamed south tributary to the lower Lowe River. The mouth of this tributary is 3.3 miles upstream from Canyon Slough. Cobb and Matson (1972, locality 79) call this occurrence 'Sulphide Gulch' , but USGS topographic maps show Sulphide Gulch about a mile west of Canyon Slough. The location shown by Cobb and Matson (1972, locality 79) is used here; it is at the center of section 11, T. 10 S., R. 5 W., of the Copper River Meridian. The accuracy of this location is uncertain.

Commodities:

Main: Au

Other: Cu, W

Ore minerals: Chalcopyrite, gold, limonite, pyrite, scheelite

Gangue minerals: Garnet, pyroxene, zircon

Geologic description:

Heavy mineral concentrate from stream gravels at this occurrence contained gold, scheelite, chalcopyrite, pyrite, limonite, pyroxene, garnet, and zircon (Rose, 1965). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972). Two massive sulfide prospects in mafic metavolcanic rocks of the Valdez Group (VA134 and VA143) are located upstream from this occurrence (Winkler and others, 1981 [OFR 80-892-B]).

Alteration:

Age of mineralization:

Holocene.

Deposit model:

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only reconnaissance sampling has been done.

Production notes:

Reserves:

Additional comments:

References:
Rose, 1965; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Rose, 1965

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Lowe River

Site type: Occurrence

ARDF no.: VA136

Latitude: 61.0640 **Quadrangle:** VA A-6

Longitude: 146.0104

Location description and accuracy:
This occurrence is along the north side of the Richardson Highway about 2 miles south-east of VABM Sponge; it is at an elevation of about 200 feet in the NW1/4 section 30, T. 9 S., R. 4 W., of the Copper River Meridian. This occurence is probably located to within one-quarter mile. It is localities 80 and 81 of Cobb and Matson (1972).

Commodities:

Main: Au

Other: W

Ore minerals: Gold, scheelite

Gangue minerals:

Geologic description:
Jasper (1967) identified scheelite in heavy mineral concentrate from stream gravels at this locality. Bedrock in the general area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

Deposit model:
Placer scheelite deposits

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only reconnaissance sampling.

Production notes:

Reserves:

Additional comments:

References:
Jasper, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Jasper, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Rose Johnson

Site type: Mine

ARDF no.: VA137

Latitude: 61.1837 **Quadrangle:** VA A-6

Longitude: 146.1632

Location description and accuracy:

This prospect is along the east side of Valdez Glacier at an elevation of about 1,300 feet; it is near the center of the south boundary of section 8, T. 8 S., R. 5 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 34 of Cobb and Matson (1972) and locality 26 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Cu, Pb, Zn?

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite, sphalerite?

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing quartz veins from a few inches to a few feet thick cut metaflysch of the Valdez Group at this locality (Johnson, 1915). A small mill was installed in 1914 but was only operated for a short time. About 50 ounces of gold were reported to have been produced (Jansons and others, 1984). The vein observed by Johnson (1915) was a few inches wide; it trended east-west and was vertical. Specimens said to have come from this property contained gold, pyrite, chalcopyrite, galena, and sphalerite(?). The gold-bearing veins at this locality are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Open cuts, short adits, and a 20-foot shaft explored this property by 1915 (Johnson, 1915).

Production notes:

About 50 ounces of gold were reported to have been produced from this property (Jansons and others, 1984).

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Jansons and others, 1984; Hudson, 1994; Goldfarb and others, 1997.

Primary reference:

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Valdez Bonanza

Site type: Prospect

ARDF no.: VA138

Latitude: 61.1901 **Quadrangle:** VA A-6

Longitude: 146.2302

Location description and accuracy:

This prospect is on a saddle on the ridge west of the Second Bench of Valdez Glacier; it is at an elevation of about 4,000 feet in the center of the W1/2 section 12, T. 8 S., R. 6 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 32 of Cobb and Matson (1972).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A gold-bearing quartz vein, 2 to 5 feet thick in outcrop, cuts metaflysch of the Valdez Group (Brooks, 1912) at this prospect. This vein can be traced on the surface for 50 feet, but it pinches out in a 100-foot-long adit. The vein is semi-parallel to cleavage in the metaflysch; the footwall is marked by slickensides that continue after the vein pinches out.

This vein is probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

This vein is exposed in a cliff and can be traced on the surface for 50 feet; it pinches out in a 100-foot-long adit (Brooks, 1912).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Brooks, 1912

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Ramsey-Rutherford

Site type: Mine

ARDF no.: VA139

Latitude: 61.2043 **Quadrangle:** VA A-6

Longitude: 146.1032

Location description and accuracy:

This mine is in a cirque valley, 1.5 miles west northwest of Prospector Peak. The mine location is shown on the USGS Valdez A-6 topographic map (1951; limited revisions, 1980). It is accurately located. This is locality 36 of Cobb and Matson (1972) and locality 28 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other: Ag, Cu, Pb, Zn

Ore minerals: Arsenopyrite, chalcopyrite, galena, gold, pyrite, pyrrhotite, sphalerite

Gangue minerals: Calcite, chlorite, quartz, siderite, white mica

Geologic description:

The Ramsey-Rutherford mine is one of the major mines in the Valdez area; it had a recorded production of 5,375 ounces of gold (Jansons and others, 1984). Two or more gold-bearing quartz veins cut metaflysch of the Valdez Group (Brooks, 1913; Johnson, 1915) at the mine. The main vein is steeply dipping and trends north-northwest. It varied in thickness from a few inches to about 6 feet; it averaged 2 to 3 feet in thickness over about 450 feet of strike length (Johnson, 1915; Jansons, 1984). The second vein, about 90 feet north of the main vein, varies from a few inches to a few feet in thickness; other small or cross-linked veins are present in the area (Hoekzema and others, 1986). Sulfide minerals are generally absent to sparsely distributed in the veins, but they also occur locally in semi-massive pods and lenses. The sulfide minerals reported at the mine include pyrrhotite, chalcopyrite, pyrite, arsenopyrite, galena, and sphalerite. In addition to quartz, calcite and siderite occur as gangue minerals (Hoekzema and others, 1986). The mine operated intermittently from 1912 to 1939 (Cobb, 1979 [OFR 79-1241]; Hoekzema and others, 1986). It was developed by at least 1,400 feet of underground workings by 1915; a 162-foot shaft was sunk in addition to adits, cross cuts, and drifts on four levels (Johnson, 1915; Hoekzema and others, 1986). Production began in 1914 after a mill was installed on site. The total recorded production of 5,375 ounces of gold and 1,194 ounces of silver was recovered from about 6,000 tons of ore (Hoekzema and others, 1986). The average

grade of the produced ore is about 1 ounce of gold per ton. Selected grab samples from the area contained from 0.05 to 37.5 ppm gold (Hoekzema and others, 1986; Pickthorn, 1982).

The gold-bearing veins at the Ramsey-Rutherford mine are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

The mine operated intermittently from 1912 to 1939 (Cobb, 1979 [OFR 79-1241]; Hoekzema and others, 1986). It was developed by at least 1,400 feet of underground workings by 1915; a 162-foot shaft was sunk in addition to adits, cross cuts, and drifts on four levels (Johnson, 1915; Hoekzema and others, 1986).

Production notes:

The total recorded production of 5,375 ounces of gold and 1,194 ounces of silver was recovered from about 6,000 tons of ore (Hoekzema and others, 1986). The average grade of the produced ore is about 1 ounce of gold per ton. Selected grab samples from the area contained from 0.05 to 37.5 ppm gold (Hoekzema and others, 1986; Pickthorn, 1982).

Reserves:

Additional comments:

References:

Brooks, 1913; Johnson, 1915; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Pickthorn, 1982; Jansons and others, 1984; Hoekzema and others, 1986; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Hoekzema and others, 1986

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Ibex; Valdez; Valdez Mining Co.; Donahue

Site type: Mine

ARDF no.: VA140

Latitude: 61.2054 **Quadrangle:** VA A-6

Longitude: 146.1988

Location description and accuracy:

These mines are on the west side of Valdez Glacier valley, at an elevation of about 2,500 feet in section 6, T. 8 S., R. 5 W., of the Copper River Meridian. The Ibex mine is shown on the USGS Valdez A-6 topographic map (1951; limited revisions, 1980). It is accurately located. This is locality 33 of Cobb and Matson (1972) and locality 25 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing quartz veins cut metaflysch of the Valdez Group at this mine. The principal vein on the Valdez claims strikes N 60 W, dips 75 degrees south, and is 5 to 6 feet thick in outcrop (Brooks, 1912). The vein is commonly 2 to 6 feet thick in underground workings, where it includes as much as 4 feet of ribbon quartz. At one location underground where the main vein was intersected by another, the vein thickness expanded to 10.5 feet (Johnson, 1916). A continuation of the main vein appears to be present on the Ibex claim about one-quarter mile northwest of the Valdez claims. At least 800 feet of workings had been driven in the Valdez adit by 1920 (Brooks, 1922). The 200-foot adit on the Ibex claim lost the vein after the first 100 feet (Brooks, 1912). A 470-foot adit, a shorter adit ,and 50-foot winze explore a quartz vein at the Donahue prospect nearby (Hoekzema and others, 1986). Grab and chip samples from the 3- to 10.5-foot-thick Donahue vein contained from less than 0.003 to 0.413 ounce of gold per ton and 0.01 to 0.1 ounce of silver per ton (Hoekzema and others, 1986).

These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole per-

cent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

At least 800 feet of workings had been driven in the Valdez adit by 1920 (Brooks, 1922). The 200-foot adit on the Ibex claim lost the vein after the first 100 feet (Brooks, 1912). A 470-foot adit, a shorter adit, and 50-foot winze explore a quartz vein at the Donahue prospect nearby (Hoekzema and others, 1986).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1912; Johnson, 1916; Brooks, 1922; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hoekzema and others, 1986; Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Brooks, 1912

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Pinochle

Site type: Prospect

ARDF no.: VA141

Latitude: 61.2010 **Quadrangle:** VA A-6

Longitude: 146.1355

Location description and accuracy:

This prospect is about nine-tenths of a mile west of the Ramsey-Rutherford Camp; it is at an elevation of about 3,300 feet in the S1/2 section 4, T. 8 S., R. 5 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 35 of Cobb and Matson (1972) and locality 27 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

A quartz vein, assumed to be gold-bearing, cuts metaflysch of the Valdez Group at this prospect. This vertical vein, which trends N 30-60 W, can be traced on the surface for 110 feet, but it pinches and swells such that the width varies from very thin to 3 feet (Johnson, 1915). About 200 feet of underground workings, a shaft, and several open cuts explored this prospect (Cobb, 1979 [OFR 79-1241]).

This vein is probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171), when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: None

Site Status: Inactive

Workings/exploration:

About 200 feet of underground workings, a shaft, and several open cuts explored this prospect (Cobb, 1979 [OFR 79-1241]).

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1915; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Johnson, 1915

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (near Prospectors Peak)

Site type: Prospect

ARDF no.: VA142

Latitude: 61.2119 **Quadrangle:** VA A-6

Longitude: 146.1019

Location description and accuracy:

This prospect is located about 0.6 mile north of the Ramsey-Rutherford Camp in section 3, T. 8 S., R. 5 W., of the Copper River Meridian. It is probably located to within one-quarter mile and is locality 88 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

This prospect consists of three patented lode claims (U. S. Bureau of Mines, 1980; Winkler, Miller, and others, 1981). These claims are assumed to have been staked on gold-bearing quartz veins that cut metaflysch of the Valdez Group. These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a?

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

At least surface prospecting has occured at this locality.

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Sulphide Gulch

Site type: Prospect

ARDF no.: VA143

Latitude: 61.0026 **Quadrangle:** VA A-6

Longitude: 146.0973

Location description and accuracy:

This prospect is in the upper valley of an unnamed south tributary to the lower Lowe River. The mouth of this tributary is 3.3 miles upstream from Canyon Slough. This prospect is on this creek in the NW1/4 section 15, T. 10 S., R. 5 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 33B of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag, Au, Zn

Ore minerals: Chalcopyrite, pyrite, pyrrhotite, sphalerite

Gangue minerals:

Geologic description:

Stratiform lenses and disseminations of sulfide minerals occur in mafic metavolcanic rocks and metasedimentary rocks of the Valdez Group; sulfide minerals include chalcopyrite, pyrite, pyrrhotite, and sphalerite (Winkler and others, 1981 [OFR 80-892-B]). The metavolcanic rocks probably represent ocean floor basalts that were accreted with the enclosing flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A].

Alteration:

Oxidation; the deposits are iron stained (Winkler and others, 1980 [OFR 80-892-B]).

Age of mineralization:

Late Cretaceous; the host metavolcanic rocks probably represent ocean floor basalts that were accreted with the enclosing flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
24a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Only reconnaissance surface examinations have been carried out.

Production notes:

Reserves:

Additional comments:

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Wortmanns Glacier

Site type: Occurrence

ARDF no.: VA144

Latitude: 61.0154 **Quadrangle:** VA A-5

Longitude: 145.7481

Location description and accuracy:

This occurrence is at an elevation of about 1,600 feet along the west side of lower Wortmanns Glacier; it is in the SW1/4 section 10, T. 10 S., R. 3 W., of the Copper River Meridian. This occurrence is probably located to within one-quarter mile. It is locality 78 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Cu

Other: Ag, Pb, Zn

Ore minerals: Chalcopyrite, galena, pyrite, sphalerite

Gangue minerals: Quartz

Geologic description:

Iron-stained lenses and quartz veins in mafic metavolcanic rocks of the Late Cretaceous Valdez Group contain pyrite, chalcopyrite, galena, and sphalerite at this occurrence (Winkler and others, 1981 [OFR 80-892-B]). The sulfide minerals are disseminated in the mafic metavolcanic rocks and in the quartz veins. The metavolcanic rocks probably represent ocean floor basalts that were accreted with the flysch of the Valdez Group (Winkler and others, 1981[OFR 80-892-A]).

Alteration:

Oxidation; mineralized zones are iron-stained.

Age of mineralization:

Late Cretaceous; the host metavolcanic rocks probably represent ocean floor basalts that were accreted with the flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Cyprus massive sulfide (Cox and Singer, 1986; model 24a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
24a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Only reconnaissance surface examinations.

Production notes:

Reserves:

Additional comments:

References:
Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Lowe River

Site type: Mine

ARDF no.: VA145

Latitude: 61.1050 **Quadrangle:** VA A-5

Longitude: 145.7508

Location description and accuracy:
This mine is near the mouth of Bench Creek on the south side of the Lowe River; it is about 4,200 feet south of the Richardson Highway on lower Bench Creek near the east boundary of section 9, T. 9 S., R. 3 W., of the Copper River Meridian. The mine workings are probably located to within one-quarter mile. This is locality 74 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Old placer gold workings are reported near the mouth of Bench Creek (Winkler and others, 1981 [OFR 80-892-B]). Bedrock in this area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:

Small-scale placer gold mining occurred at this localty (Winkler and others, 1981 [OFR 80-892-B]).

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Ptarmigan

Site type: Occurrence

ARDF no.: VA146

Latitude: 61.1834 **Quadrangle:** VA A-5

Longitude: 145.6139

Location description and accuracy:
This occurrence is on a small south tributary to the Tsina River; it is about one-third mile southeast of Ptarmigan and is at an elevation of about 2,000 feet in the SE1/4 section 8, T. 8 S., R. 3 W., of the Copper River Meridian. This occurrence is probably located to within one-quarter mile. It is locality 83 of Cobb and Matson (1972).

Commodities:

Main: W

Other:

Ore minerals: Scheelite

Gangue minerals:

Geologic description:
Scheelite has been identified in stream gravels at this location (Jasper, 1967). Bedrock in the general area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981[OFR 80-892-A]).

Alteration:

Age of mineralization:
Holocene.

Deposit model:
Scheelite in stream gravel

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only reconnaissance sampling.

Production notes:

Reserves:

Additional comments:

References:
Jasper, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Jasper, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (at foot of Worthington Glacier)

Site type: Occurrence

ARDF no.: VA147

Latitude: 61.1717 **Quadrangle:** VA A-5

Longitude: 145.7097

Location description and accuracy:

This occurrence is on the outwash plain of Worthington Glacier, about four-tenths of a mile northwest of the Richardson Highway. It is at an elevation of about 2,200 feet in the SE1/4 section 14, T. 8 S., R. 3 W., of the Copper River Meridian. This occurrence is probably located to within one-quarter mile. This is locality 82 of Cobb and Matson (1972) and locality 92 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: W

Other:

Ore minerals: Scheelite

Gangue minerals:

Geologic description:

Scheelite has been identified in stream gravels at this location (Jasper, 1967). Bedrock in the area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:

Holocene.

Deposit model:

Scheelite in stream gravels

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only reconnaissance sampling.

Production notes:

Reserves:

Additional comments:

References:
Jasper, 1967; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Jasper, 1967

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Unnamed (north of Thompson Pass)

Site type: Prospect

ARDF no.: VA148

Latitude: 61.1472 **Quadrangle:** VA A-5

Longitude: 145.7508

Location description and accuracy:

This prospect is about 1.9 miles north of Thompson Pass and about one-quarter of a mile northwest of the trans-Alaska oil pipeline. It is at an elevation of about 2,500 feet in the SE1/4 section 22, T. 8 S., R. 3 W., of the Copper River Meridian. This prospect is probably located to within one-half mile. It is locality 91 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Lode claims were staked and active from 1953 to 1955 on gold deposits at this locality (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). These deposits are probably gold-bearing quartz veins similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:

Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Small-scale surface prospecting.

Production notes:

Reserves:

Additional comments:

References:

U.S. Bureau of Mines, 1980; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Wortmanns

Site type: Prospect

ARDF no.: VA149

Latitude: 61.1042 **Quadrangle:** VA A-5

Longitude: 145.8653

Location description and accuracy:
This prospect is on lower Bear Creek about 1.5 miles southwest from Wortmanns on the Richardson Highway in the W1/2 section 12, T. 9 S., R. 3 W., of the Copper River Meridian. This is locality 89 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold claims were staked on lower Bear Creek as early as 1900 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). The entire valley of the Lowe River between Keystone Canyon and Heiden Canyon was drilled and staked for placer gold deposits in 1915 (Johnson, 1916), but the mining was not successful (Moffit, 1954). Bedrock in this area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Small-scale placer gold mining or prospecting occurred at this localty prior to WWI (Winkler and others, 1981 [OFR 80-892-B]).

Production notes:

Reserves:

Additional comments:

References:

Johnson, 1916; Moffit, 1954; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Sheep Creek

Site type: Prospect

ARDF no.: VA150

Latitude: 61.1267 **Quadrangle:** VA A-5

Longitude: 145.8261

Location description and accuracy:
This prospect is on Sheep Creek, about 2,400 feet upstream from the Richardson Highway; it is on the creek and on the south boundary of section 31, T. 8 S., R. 3 W., of the Copper River Meridian. This prospect is probably located to within one-quarter mile. It is locality 90 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold claims were staked on Sheep Creek in 1971 and were active until at least to 1973 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]). Bedrock in this area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: Undetermined.

Site Status: Probably inactive

Workings/exploration:

Placer gold claims were staked on Sheep Creek in 1971 and were active until at least to 1973 (U.S. Bureau of Mines, 1980; Winkler and others, 1981 [OFR 80-892-B]).

Production notes:

Reserves:

Additional comments:

References:

Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Winkler and others, 1981 (OFR 80-892-B)

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Marshall Glacier

Site type: Occurrence

ARDF no.: VA151

Latitude: 61.0810 **Quadrangle:** VA A-5

Longitude: 145.5099

Location description and accuracy:

This occurrence is about eight-tenths of a mile northeast of the toe of Marshall Glacier on an unnamed stream; it is approximately on the north boundary of section 24, T. 9 S., R. 2 W., of the Copper River Meridian. This occurrence is approximately located, perhaps within a mile or more.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, pyrite, pyrrhotite

Gangue minerals: Quartz

Geologic description:

Float of massive and semimassive sulfide cobbles and boulders have been found in the drainage of Marshall Glacier (Kodosky and Teller, 1989). Minerals identified in these cobbles include chalcopyrite, pyrite, pyrrhotite, and quartz. The source and setting of this mineralization has not been identified. It is tentatively considered to be similar to other sulfide-rich occurrences in mafic metavolcanic rocks of the Valdez Group (for example, VA055 and VA144).

Alteration:

Age of mineralization:

Late Cretaceous?; the host metavolcanic rocks may be ocean-floor basalts that were accreted with the enclosing flysch of the Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Deposit model:

Cyprus massive sulfide? (Cox and Singer, 1986; model 24a)

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

24a?

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Only reconnaissance surface examinations and sampling have taken place.

Production notes:

Reserves:

Additional comments:

References:
Kodosky and Teller, 1989.

Primary reference: Kodosky and Teller, 1989

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Townsend and Holland

Site type: Prospect

ARDF no.: VA152

Latitude: 61.2084 **Quadrangle:** VA A-4

Longitude: 145.4349

Location description and accuracy:

This prospect is immediately below the Richardson Highway, about one-half mile west of mile 40. It is at benchmark Elbow (elevation of 1,656 feet) in the NW1/4 section 4, T. 8 S., R.1 W., of the Copper River Meridian. It is locality 42 of Cobb and Matson (1972) and locality 34 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Arsenopyrite, gold, pyrite

Gangue minerals: Carbonate minerals, chlorite, quartz, white mica

Geologic description:

Gold-bearing quartz veins from 3 to 5 feet thick cut metaflysch of the Valdez Group at this prospect (Moffit, 1935). One vein strikes N 40 E and was followed in an adit for 300 feet. Open cuts and a 150-foot long adit were also used to explore the veins. These veins are probably similar to others that are widespread in the southern Valdez quadrangle. Data summarized by Goldfarb and others (1997) show that gold-bearing quartz veins in the Valdez Group commonly contain pyrite, arsenopyrite, carbonate minerals, chlorite, and white mica and formed from water-rich fluids with 5 to 15 mole percent CO2 and significant amounts of CH4, N2, and H2S. The vein-forming fluid salinities were less than 8 percent, vein formation temperatures ranged from 225 to 375 degrees centigrade, and emplacement depths varied from 3 to 10 kilometers. The vein-forming fluids were produced by metamorphic devolatization reactions. Radiometric dating indicates that the veins formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

Alteration:

Country rocks to gold-bearing quartz veins in Valdez Group metaflysch can be variably silicified, carbonitized, and sericitized (Goldfarb and others, 1997).

Age of mineralization:
Radiometric dating indicates that the gold-bearing quartz veins in the Valdez Group formed from 57 to 49 Ma (Goldfarb and others, 1997, p. 171) when deep parts of the accreted Valdez Group flysch underwent high-grade metamorphism and partial melting (Hudson, 1994).

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

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
36a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
One vein strikes N 40 E and was followed in an adit for 300 feet. Open cuts and a150-foot long adit were also used to explore the veins (Moffit, 1935).

Production notes:

Reserves:

Additional comments:

References:
Moffit, 1935; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A); Hudson, 1994; Goldfarb and others, 1997.

Primary reference: Moffit, 1935

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Tiekel River

Site type: Occurrence

ARDF no.: VA153

Latitude: 61.2337 **Quadrangle:** VA A-3

Longitude: 144.9347

Location description and accuracy:
This prospect is on a bench along the south side of the Tiekel River, about 3 miles upstream from its mouth on the Copper River. It is at an elevation of about 700 feet in the NE1/4 section 30, T. 7 S., R. 3 E., of the Copper River Meridian. This prospect is approximately located, probably to within one-half mile. It is locality 91 of Cobb and Matson (1972) and locality 70 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Brooks (1914, p. 62) reported that placer gold was discovered on a bench along the right (south) side of Tiekel River. Enough gold was supposedly present to warrant installing a hydraulic plant in 1914, but there is no record of this or of subsequent mining (Cobb, 1979 [OFR 79-1241]). The bedrock of the Tiekel River is greenschist-facies flysch of the Late Creatceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]).

Alteration:

Age of mineralization:
Holocene.

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

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:

At least surface prospecting occurred in this area. Enough gold was supposedly present to warrant installing a hydraulic plant in 1914, but there is no record of this or of subsequent mining (Brooks, 1914; Cobb, 1979 [OFR 79-1241]).

Production notes:

Reserves:

Additional comments:

References:

Brooks, 1914; Cobb and Matson, 1972; Cobb, 1979 (OFR 79-1241); Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Brooks, 1914

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

Site name(s): Little Bremner River

Site type: Mine

ARDF no.: VA154

Latitude: 61.1510 **Quadrangle:** VA A-2

Longitude: 144.4208

Location description and accuracy:

Some placer gold mining and prospecting took place locally near the mouth of Falls Creek on Little Bremner River along active outwash of the glacier at the head of the river (Moffit, 1914). The mine is on the river at an elevation of about 1,325 feet in the NE1/4 section 25, T. 8 S., R. 5 E., of the Copper River Meridian. The location of mining is approximate, perhaps within 1 or 2 miles. It is locality 92 of Cobb and Matson (1972) and locality 71 of Winkler and others (1981 [OFR 80-892-B]).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer gold was discovered on Little Bremner River in 1901, and a little mining took place, mostly at the lower end of the active outwash plain of the glacier at the head of the river (Moffit, 1914). Drilling in 1911 showed that generally coarse gold was present in 7 feet of gravel above at least 40 feet of glacial mud. Bedrock in the general area is greenschist-facies metaflysch of the Late Cretaceous Valdez Group (Winkler and others, 1981 [OFR 80-892-A]). Gold-bearing quartz veins are widespread through the Valdez Group in the southern Valdez quadrangle (Cobb and Matson, 1972).

Alteration:

Age of mineralization:

Holocene.

Deposit model:

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

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

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Some drilling and small-scale mining occurred in this area between 1901 and 1911 (Moffit,1914).

Production notes:

Reserves:

Additional comments:
This mine and prospect area are within the Wrangell-St. Elias National Park.

References:
Moffit, 1914; Cobb and Matson, 1972; Winkler and others, 1981 (OFR 80-892-B); Winkler and others, 1981 (OFR 80-892-A).

Primary reference: Moffit, 1914

Reporter(s): Travis L. Hudson

Last report date: 12/14/01

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