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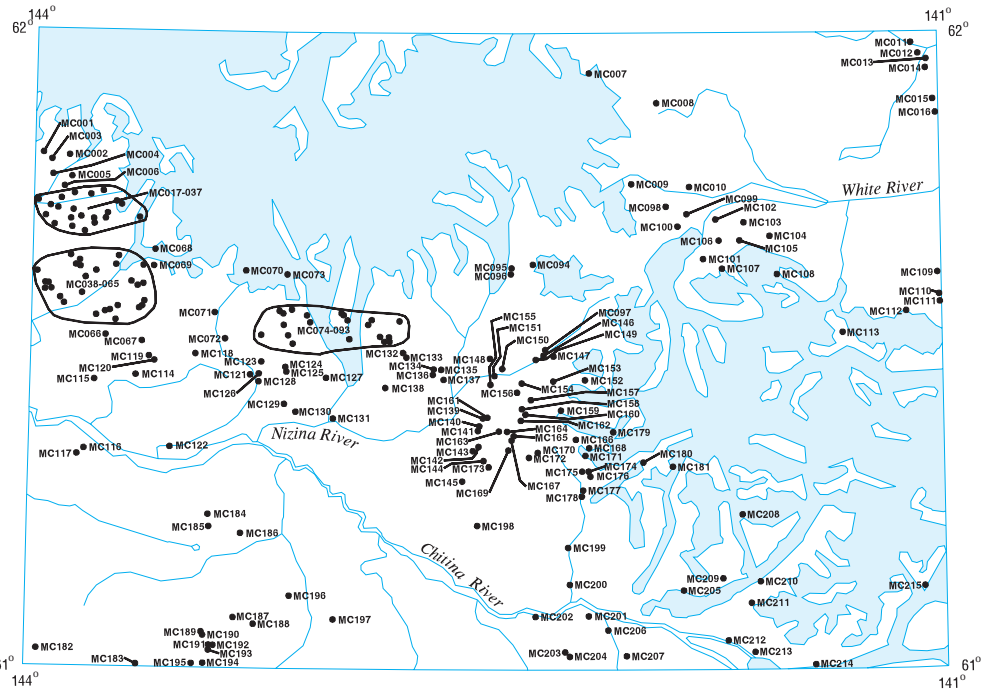
Alaska Resource Data File

McCarthy 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 McCarthy 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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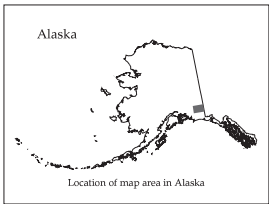

OPEN-FILE REPORT 03-404

Site name(s): Unnamed (north of Scotty Peak)

Site type: Occurrence

ARDF no.: MC001

Latitude: 61.8059 **Quadrangle:** MC D-8

Longitude: 143.9725

Location description and accuracy:

This occurrence is about 2 miles north of Scotty Peak. It is at an elevation of about 5,800 feet, 4,000 feet southwest of peak 6225, about 1,900 feet south-southeast of the center of section 4, T. 1 S., R. 8 E. of the Copper River Meridian. This is locality 183 of MacKevett (1976). The location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other: Ag

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consist of a vein that is localized in a fault zone that cuts Nikolai Greenstone. A sample contained 0.5 part per million (ppm) silver and 15,000 ppm copper (MacKevett, 1976).

Alteration:

Age of mineralization:

Triassic or younger based on the age of the host rocks.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Hidden Treasure

Site type: Prospect

ARDF no.: MC002

Latitude: 61.8025 **Quadrangle:** MC D-8

Longitude: 143.8860

Location description and accuracy:

This prospect is on the ridge east of upper Fall Creek. It is at an elevation of about 5,600 feet, 1,000 feet northeast of peak 6050. The site is in the NW1/4 of section 12, T. 1 S., R. 8 E. of the Copper River Meridian. This is locality 182 of MacKevett (1976); the location is accurate to within 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Fall Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, native copper

Gangue minerals: Quartz

Geologic description:

The deposit at this prospect consists of bornite and chalcocite in thin veins, and native copper and chalcocite that fill amygdules in Triassic Nikolai Greenstone (Moffit and Mertie, 1923, p. 114; MacKevett, 1976). Quartz accompanies some copper mineralization. A short adit and surface open cuts explored this prospect. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
A short adit and surface open cuts explored this prospect.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Homestake and New Home

Site type: Prospect

ARDF no.: MC003

Latitude: 61.7954 **Quadrangle:** MC D-8

Longitude: 143.9441

Location description and accuracy:

This prospect is on a west tributary to Fall Creek. It is at an elevation of about 4,600 feet, 1,200 feet west of the center of section 10, T. 1 S., R. 8 E. of the Copper River Meridian. This is locality 181 of MacKevett (1976); the location is accurate to within about 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Fall Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, bornite, chalcocite, cuprite, malachite, native copper, tenorite

Gangue minerals: Calcite, quartz

Geologic description:

The deposit of this prospect consists of quartz-calcite veins and native copper, chalcocite, bornite, cuprite, and tenorite along a fault in amygdaloidal basalt of the Triassic Nikolai Greenstone (Moffit and Mertie, 1923; MacKevett, 1976). Malachite and azurite coat fractures in the greenstone. The deposits were explored by short adits and open cuts. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by short adits and open cuts.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; Cobb and MacKevett, 1980; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Good Enough

Site type: Prospect

ARDF no.: MC004

Latitude: 61.7718 **Quadrangle:** MC D-8

Longitude: 143.9392

Location description and accuracy:

This prospect is on a small unnamed north tributary to the upper Kluvesna River. It is at an elevation of about 4,000 feet, 5,100 feet east-southeast of Scotty Peak, and 2,000 feet west of Fall Creek. The site is about 1,600 feet north of the center of section 22, T. 1 S., R. 8 E. of the Copper River Meridian. This is locality 180 of MacKevett (1976); the location is accurate to within about 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Good Enough'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, chalcocite, cuprite, malachite, native copper

Gangue minerals: Calcite, quartz

Geologic description:

The deposit at this prospect consists of chalcocite with minor native copper, cuprite, malachite, and azurite that occur in veins, amygdule fillings, and replacements of Triassic Nikolai Greenstone (Moffit and Mertie, 1923, p. 112-113; MacKevett, 1976). Calcite and quartz commonly accompany the copper mineralization. Strong fracturing and faulting of the Nikolai Greenstone localized some veins. The deposits were explored with two short adits. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Low-grade calcite, quartz, and epidote(?) veining and replacement of greenstone. Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Juras-

sic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored with two short adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of upper Kluvesna River)

Site type: Prospect

ARDF no.: MC005

Latitude: 61.7689 **Quadrangle:** MC D-8

Longitude: 143.8763

Location description and accuracy:

This prospect is south of upper Kluvesna River, about a mile south of the terminus of the Kluvesna Glacier. The prospect is about 3,000 feet southeast of Kluvesna River near the center of section 24, T. 1 S., R. 8 E. of the Copper River Meridian. This is National Park Service locality WRST-119 and it is approximately located. The latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify 3 placer gold claims at this locality. Their position on the National Park Service map is not on an obvious drainage. Bedrock in the valley of upper Kluvesna River is Triassic Nikolai Greenstone intruded by upper Jurassic granitic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

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

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

39a

Production Status: Undetermined.

Site Status: Inactive

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

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC006

Latitude: 61.7534 **Quadrangle:** MC D-8

Longitude: 143.9004

Location description and accuracy:

This prospect is on Mineral Creek, a small south tributary to the upper Kluvesna River. It is at an elevation of about 3,500 feet in the NE1/4 of section 26, T. 1 S., R. 8 E. of the Copper River Meridian. This is locality 179 of MacKevett (1976); the location is accurate to within 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Mineral Cr.'.

Commodities:

Main: Cu

Other: Ag, Au

Ore minerals: Chalcocite, chalcopyrite, pyrite

Gangue minerals: Quartz

Geologic description:

In this area, many quartz veins up to 4 feet thick contain pyrite, chalcopyrite, and minor chalcocite (Moffit and Mertie, 1923; MacKevett, 1976). The veins are commonly less than 2 feet thick, are localized along faults showing post-vein displacement, and cut both Permian argillite and upper Jurassic granitic rocks. Assays show up to 3 ounces of both gold and silver per ton (Moffit and Mertie, 1923). The area was explored with several short adits and drifts.

Alteration:

Silicification.

Age of mineralization:

Late Jurassic or younger based on the age of the host rock of the veins.

Deposit model:

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

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

22c

Production Status: None

Site Status: Inactive

Workings/exploration:
The area was explored with several short adits and drifts.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of Bow Pass)

Site type: Occurrence

ARDF no.: MC007

Latitude: 61.9377 **Quadrangle:** MC D-4

Longitude: 142.1617

Location description and accuracy:

This occurrence is 1.2 miles south of Bow Pass. It is at an elevation of about 6,700 feet, about 5,000 feet northeast of elevation 8430 in the SW1/4 of section 20, T. 2 N., R. 18 E. of the Copper River Meridian. This is locality 189 of MacKevett (1976). The location is probably accurate to within 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite

Gangue minerals: Quartz

Geologic description:

This occurrence consists of thin chalcocite- and bornite-bearing quartz veins that are localized along the contact of Tertiary felsite (MacKevett, 1976). A sample of the vein material contained 15 parts per million (ppm) silver and more than 20,000 ppm copper.

Alteration:

Silicification.

Age of mineralization:

Tertiary based on the age of the felsite host rock.

Deposit model:

Quartz veins with chalcocite and bornite

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only minor surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC008

Latitude: 61.8906 **Quadrangle:** MC D-3

Longitude: 141.9375

Location description and accuracy:

This occurrence is near the head of Geohenda Creek. It is at an elevation of about 5,250 feet, 4,000 feet northeast of elevation 5390 and 2,000 feet northwest of elevation 5490. The site is 2,000 feet south of the center of section 4, T. 1 N., R. 19 E., of the Copper River Meridian. This is locality 184A of MacKevett (1976); the location is probably accurate to within 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Cuprite, malachite, native copper

Gangue minerals:

Geologic description:

This occurrence consists of native copper, malachite, and cuprite that fill amygdules in a small isolated outcrop of Triassic Nikolai Greenstone (MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

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

23

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Copper King

Site type: Prospect

ARDF no.: MC009

Latitude: 61.7634 **Quadrangle:** MC D-3

Longitude: 142.0218

Location description and accuracy:

This prospect is at an elevation of about 6,000 feet, southwest of the terminus of Middle Fork Glacier. It is near the southwest corner of section 20, T. 1 S., R. 19 E. of the Copper River Meridian. This is locality 172 of MacKevett (1976); the location is probably accurate to within 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Copper King (White River)'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, malachite, native copper

Gangue minerals: Calcite, epidote(?), prehnite, zeolite minerals

Geologic description:

This deposit at this prospect consists of a 2-meter-thick zone in Triassic amygdaloidal basalt that contains native copper, azurite, and malachite (Capps, 1916; MacKevett, 1976). The copper is intergrown with calcite, prehnite, and other zeolite minerals. Copper mineralization is common in Triassic Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Replacement by calcite, epidote(?), prehnite, and other zeolite minerals.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored by two open cuts and 2 short adits (Capps, 1916).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Capps, 1916; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Capps, 1916

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Lime Creek

Site type: Prospect

ARDF no.: MC010

Latitude: 61.7586 **Quadrangle:** MC D-3

Longitude: 141.8302

Location description and accuracy:
This placer gold prospect is on Lime Creek, a west tributary to the upper White River. It is at an elevation of about 4,150 feet in the NW1/4 of section 29, T. 1 S., R. 20 E. of the Copper River Meridian. This is National Park Service locality WRST-132 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold prospect. Bedrock in the valley of Lime Creek is mostly upper Paleozoic sedimentary and volcanic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Beaver Creek)

Site type: Prospect

ARDF no.: MC011

Latitude: 61.9825 **Quadrangle:** MC D-1

Longitude: 141.0879

Location description and accuracy:

This prospect is on the south side of a small, unnamed east tributary to Beaver Creek. It is at an elevation of about 3,700 feet about 2,000 feet west of the center of section 6, T. 2 N., and R. 24 E. of the Copper River Meridian. This is locality 188 of MacKevett (1976).

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, pyrite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of pyrite and minor chalcopyrite in veins and as disseminations in granodiorite and in adjacent hornfels roof pendants (Moffit and Knopf, 1910; MacKevett, 1976). The prospect is on the south side of a prominent shear zone that trends east-west along an unnamed tributary to Beaver Creek (Knaebel, 1970). Bedrock in the area is Jurassic or Cretaceous siliciclastic rocks intruded by Cretaceous granitic rocks (MacKevett, 1978).

Alteration:

Oxidation. Rusty exposures mark the mineralization (Knaebel, 1970).

Age of mineralization:

Cretaceous? The mineralization appears to be related to the emplacement of Cretaceous granitic rocks.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Probably some minor workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Knopf, 1910; Knaebel, 1970; MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Colorado; Wiley

Site type: Prospect

ARDF no.: MC012

Latitude: 61.9655 **Quadrangle:** MC D-1

Longitude: 141.0645

Location description and accuracy:

This prospect is on the south bank of Beaver Creek. It is at an elevation of about 3,300 feet in the SW1/4 of section 8, T. 2 N., R. 24 E. of the Copper River Meridian. This is locality 187 of MacKevett (1976) and it is included in National Park Service localities WRST-176A and WRST-275 (unpublished data). Cobb and MacKevett (1980) included this prospect under the name 'Wiley'. The location is accurate within about 1,000 feet.

Commodities:

Main: Au, Cu

Other:

Ore minerals: Chalcopyrite, gold, pyrite, pyrrhotite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of a small massive sulfide body that contains pyrrhotite with minor chalcopyrite, arsenopyrite, and gold; it is surrounded by surficial materials (Moffit and Knopf, 1910; Knaebel, 1970; MacKevett, 1976). Bedrock in the area is Jurassic or Cretaceous siliciclastic rocks; about a mile to the north, they are intruded by Cretaceous granitic rocks and about a mile to the south by Tertiary gabbro (MacKevett, 1978). The deposit was explored by a short adit.

Alteration:

Age of mineralization:

Cretaceous or Tertiary; the deposit may be related to Cretaceous or Tertiary intrusive rocks in the area.

Deposit model:

Massive sulfide replacement?

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored by a short adit.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Knopf, 1910; Knaebel, 1970; MacKevett, 1976; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit and Knopf, 1910

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Lower Ptarmigan Creek

Site type: Prospect

ARDF no.: MC013

Latitude: 61.9566 **Quadrangle:** MC D-1

Longitude: 141.0375

Location description and accuracy:
This placer prospect is on lower Ptarmigan Creek about 0.8 mile upstream of its mouth. The site is in the NE1/4 of section 17, T. 2 N., R. 24 E. of the Copper River Meridian. This is locality 186 of MacKevett (1976) and National Park Service locality WRST-248 (unpublished data). It is probably accurate to within 1,000 feet.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
MacKevett (1976) identifies this location as a placer gold prospect, and National Park Service unpublished data indicate that hydraulic mining has taken place here.

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Some small-scale placer workings are probably present.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (lower Ptarmigan Creek)

Site type: Occurrence

ARDF no.: MC014

Latitude: 61.9425 **Quadrangle:** MC D-1

Longitude: 141.0405

Location description and accuracy:

This occurrence is in outcrops on a bench on the east side of lower Ptarmigan Creek. It is at an elevation of about 3,500 feet and 9,500 feet south of Beaver Creek. The site is about 1,600 feet east-northeast of the center of section 20, T. 2 N., R. 24 E. of the Copper River Meridian. This is locality 185 of MacKevett (1976). It is probably accurate to within 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, pyrite

Gangue minerals:

Geologic description:

This occurrence consists of pyrite and minor chalcopyrite that coat fracture surfaces in altered Tertiary gabbro (Knaebel, 1970; MacKevett, 1978). The alteration includes abundant replacement by sericitized plagioclase and chlorite. The closely-spaced fractures trend N 70-80 E and are commonly slickensided. The occurrence is near the faulted north contact of gabbro with Jurassic or Cretaceous siliciclastic rocks (MacKevett, 1978).

Alteration:

Alteration in the gabbro includes abundant replacement by sericitized plagioclase and chlorite.

Age of mineralization:

The gabbro host rock is late Tertiary.

Deposit model:

Pyrite and chalcopyrite along fractures in gabbro

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Knaebel, 1970; MacKevett, 1976; MacKevett, 1978.

Primary reference: Knaebel, 1970

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Rocker Creek

Site type: Occurrence

ARDF no.: MC015

Latitude: 61.8936 **Quadrangle:** MC D-1

Longitude: 141.0180

Location description and accuracy:
This placer gold occurrence is on Rocker Creek at an elevation of about 3,700 feet; it is near the center of section 4, T. 1 N., R. 24 E. of the Copper River Meridian. This is locality 184 of MacKevett (1976); the location is probably accurate to within a few thousand feet.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
MacKevett (1976) identified this locality as a placer gold occurrence. Bedrock in Rocker Creek is mostly Tertiary hypabyssal intrusive rocks (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Some small-scale surface workings may be present.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC016

Latitude: 61.8722 **Quadrangle:** MC D-1

Longitude: 141.0096

Location description and accuracy:

This prospect is near Lignite Creek, a south tributary to Rocker Creek. It is National Park Service locality WRST-274 and is approximately located, perhaps to within a mile. The prospect is near the center of the NE1/4 of section 16, T. 1 N., R. 24 E. of the Copper River Meridian. The latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Co

Other:

Ore minerals: Cobaltite(?)

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a cobalt prospect. Bedrock in this area is mostly Tertiary hypabyssal intrusive rocks (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Kotsina River)

Site type: Occurrence

ARDF no.: MC017

Latitude: 61.7471 **Quadrangle:** MC C-8

Longitude: 143.7711

Location description and accuracy:

This occurrence is on the west valley wall of the north headwater fork of the Kotsina River. It is at an elevation of about 3,300 feet in the SW1/4 of section 27, T. 1 S., R. 9 E. of the Copper River Meridian. This is locality 174 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Mo

Other: Cr, Ti

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of widely-spaced quartz veinlets that cut Triassic Nikolai Greenstone near a contact with Jurassic granitic rocks (MacKevett, 1976; MacKevett and others, 1978). A sample of the veins contained 300 parts per million (ppm) molybdenum, 700 ppm chromium, and more than 1 percent titanium.

Alteration:

Age of mineralization:

Triassic or younger based on the age of the host rocks.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (southwest flank of Granite Peak)

Site type: Occurrence

ARDF no.: MC018

Latitude: 61.7425 **Quadrangle:** MC C-8

Longitude: 143.8667

Location description and accuracy:

This occurrence is on the southwest flank of Granite Peak. It is at an elevation of about 6,200 feet, 1,400 feet south-southwest of Granite Peak, and 2,300 feet northeast of the center of section 36, T. 1 S., R. 8 E. of the Copper River Meridian. This is locality 178 of MacKevett (1976) and locality 3 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other: Ag, Au, Ba, Mo

Ore minerals: Chalcopyrite, pyrite

Gangue minerals: Quartz

Geologic description:

This occurrence consists of numerous pyrite- and chalcopyrite-bearing quartz veinlets and sulfide disseminations in Jurassic granodiorite (MacKevett, 1976). Samples of the mineralization contain as much as 0.1 part per million (ppm) gold, 2 ppm silver, 5,000 ppm copper, 70 ppm molybdenum, more than 5,000 ppm barium, and 100 ppm antimony.

Alteration:

The type of alteration is not specified.

Age of mineralization:

Jurassic or younger based on the age of the granodiorite host rock.

Deposit model:

Porphyry Cu (Cox and Singer, 1986; model 17)

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

17

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Surprise Creek; Laddie; Sheehan; Hubbard

Site type: Prospect

ARDF no.: MC019

Latitude: 61.7410 **Quadrangle:** MC C-8

Longitude: 143.8120

Location description and accuracy:

This prospect is on the small ridge between Surprise and Sunshine creeks. It is at an elevation of about 3,700 feet, 1,000 feet northeast of the center of section 32, T. 1 S., R. 9 E. of the Copper River Meridian. This is locality 173 of MacKevett (1976) and locality 4 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Surprise Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, chalcopyrite, pyrite

Gangue minerals: Calcite, quartz

Geologic description:

The deposit at this prospect consists of discontinuous quartz-calcite veins up to 8 feet thick, but commonly much thinner, that are localized along a shear zone (Moffit and Maddren, 1909; Moffit and Mertie, 1923; MacKevett, 1976). The veins contain chalcocite, bornite, chalcopyrite, and pyrite. The veins mostly cut Triassic Nikolai Greenstone although most of the country rock in the area is Jurassic granitic rock (MacKevett and others, 1978). A few short adits and numerous open cuts explore this deposit. A total of six claims were once staked end-to-end along the mineralized shear zone.

Alteration:

Age of mineralization:

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:

A few short adits and numerous open cuts explore this deposit. A total of six claims were once staked end-to-end along the mineralized shear zone.

Production notes:

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Moffit and Maddren, 1909; Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Silver Star

Site type: Prospect

ARDF no.: MC020

Latitude: 61.7345 **Quadrangle:** MC C-8

Longitude: 143.9096

Location description and accuracy:

This prospect is near the summit of the ridge north of the Kotsina River. It is at an elevation about 5,300 feet, about 700 feet south-southeast of elevation 5629 (Vesna) and 1,000 feet south-southwest of the center of section 35, T. 1 S., R. 8 E. of the Copper River Meridian. This is locality 176 of MacKevett (1976) and locality 2 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Silver Star'.

Commodities:

Main: Ag, Cu, Pb, Zn

Other:

Ore minerals: Argentiferous tetrahedrite, azurite, galena, malachite, sphalerite

Gangue minerals: Quartz

Geologic description:

The deposit at this prospect consists of quartz veins to 30 inches wide that are localized along faults and hanging wall fractures in Triassic Nikolai Greenstone (Moffit and Mertie, 1923; MacKevett, 1976). The veins contain argentiferous tetrahedrite, galena, sphalerite, malachite, and azurite. Samples of selected material were reported to assay 25 to 700 ounces of silver per ton and 1 to 32 percent copper (Mertie and Moffit, 1923). The deposits were explored by two adits up to 260 feet long.

Alteration:

Oxidation of copper minerals; iron-staining.

Age of mineralization:

Triassic or younger based on the age of the host rock.

Deposit model:

Polymetallic vein (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 deposits were explored by two adits up to 260 feet long.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (near head of Kotsina River)

Site type: Prospect

ARDF no.: MC021

Latitude: 61.7310 **Quadrangle:** MC C-8

Longitude: 143.7264

Location description and accuracy:

An unpublished National Park Service map and accompanying database identify this locality as a copper prospect. The prospect is approximately located on the Kotsina River near the mouth of Shower Gulch. It is 2,000 feet north of the center of section 2, T. 2 S., R. 9 E. of the Copper River Meridian. The latitude and longitude for this record were provided by the National Park Service. The accuracy of this location is not known.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a copper prospect. Bedrock in the area is Triassic Nikolai Greenstone (MacKevett and others, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and others, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Lost Cabin Extension

Site type: Prospect

ARDF no.: MC022

Latitude: 61.7307 **Quadrangle:** MC C-8

Longitude: 143.9861

Location description and accuracy:

This prospect is west of the lower Kluvesna River. It is at an elevation of about 2,400 feet near the southeast corner of section 32, T. 1 S., R 8 E. of the Copper River Meridian. This is locality 177 of MacKevett (1976) and locality 1 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, chalcopyrite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of chalcocite, bornite, and chalcopyrite that are sparsely disseminated in iron-stained Triassic Nikolai Greenstone near its contact with overlying Triassic Chitistone Limestone (Moffit and Mertie, 1923; MacKevett, 1976). The deposits were explored by 4 adits and several open cuts. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by 4 adits and several open cuts.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Shower Gulch; Copper King; Keystone

Site type: Prospect

ARDF no.: MC023

Latitude: 61.7262 **Quadrangle:** MC C-8

Longitude: 143.7096

Location description and accuracy:

This prospect is on Shower Gulch at the head of the Kotsina River. It is at an elevation of about 3,800 feet, 2,500 feet north-northeast of elevation 5522 and 2,500 feet east-northeast of the center of section 2, T. 2 S., R. 9 E. of the Copper River Meridian. This is locality 164 of MacKevett (1978) and locality 7 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Shower Gulch'.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, native copper

Gangue minerals: Epidote, quartz

Geologic description:

The deposit at this prospect consists of native copper in the amygdaloidal upper parts of basalt flows in the Triassic Nikolai Greenstone (Moffit and Mertie, 1923; MacKevett, 1976). The flows are 5 to 25 feet thick The amygdules are mostly filled with quartz and epidote but leaves, grains, and masses of native copper are also present in them (Moffit and Mertie, 1923). A small amount of chalcopyrite was identified in greenstone replaced by quartz and epidote. The deposits were explored by open cuts. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone

of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored by open cuts.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Kimberly

Site type: Prospect

ARDF no.: MC024

Latitude: 61.7226 **Quadrangle:** MC C-8

Longitude: 143.9454

Location description and accuracy:

An unpublished National Park Service map places this prospect on the low ridge north of the junction of the lower Kluvesna River and the Kotsina River. The prospect is approximately located at an elevation of about 3,200 feet, 1,400 feet west of the center of section 3, T. 2 S., R. 8 E. of the Copper River Meridian. This is National Park Service locality WRST-120 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Ag, Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a silver and copper prospect. Bedrock in the area is Triassic Nikolai Greenstone (MacKevett and others, 1978). The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation?

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu? (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Perhaps some surface exploration.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north bank of the Kotsina River)

Site type: Occurrence

ARDF no.: MC025

Latitude: 61.7193 **Quadrangle:** MC C-8

Longitude: 143.9204

Location description and accuracy:

This occurrence is on the north bank of the Kotsina River, 4,200 feet downstream of the mouth of Finnesand Creek. It is at an elevation of about 2,600 feet, 3,000 feet southwest of the center of section 2, T. 2 S., R 8 E. of the Copper River Meridian. This is locality 171 of MacKevett (1976) and locality 5 of MacKevett and others (1978). The location is accurate to within 100 feet. Cobb and MacKevett (1980) included this occurrence under the name 'Kotsina R.'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, chalcocite, malachite, native copper

Gangue minerals: Quartz

Geologic description:

This occurrence consists of native copper, chalcocite, and some malachite and azurite associated with quartz veins and amygdule fillings in Triassic Nikolai Greeenstone (Moffit and Mertie, 1923; MacKevett, 1976). The occurrence is at a narrow part of the Kotsina River and native copper is present in greenstone on both banks (Moffit and Mertie, 1923). The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamor-

phism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south bank of Kotsina River)

Site type: Prospect

ARDF no.: MC026

Latitude: 61.7165 **Quadrangle:** MC C-8

Longitude: 143.8696

Location description and accuracy:

This prospect is on the south bank of the Kotsina River, 2,200 feet downstream of the mouth of Amy Creek. It is at an elevation of 2,600 feet, 3,000 feet southeast of the center of section 1, T. 2 S., R. 8 E., of the Copper River Meridian. This is locality 170 of MacKevett (1976) and locality 6 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Chalcopyrite, pyrite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of pyrite- and chalcopyrite-bearing veins less than 30 centimeters thick that cut Triassic gabbro and Tertiary(?) felsic dikes. Some of the pyrite is localized along iron-stained fault zones (Moffit and Mertie, 1923). Samples of the mineralization contain as much as 3 parts per million (ppm) silver and 1,000 ppm copper. The deposits were explored by several short adits.

Alteration:

Oxidation.

Age of mineralization:

Tertiary? The veins cut felsic dikes that may be Tertiary in age.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by several short adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC027

Latitude: 61.7123 **Quadrangle:** MC C-8

Longitude: 143.7559

Location description and accuracy:

This occurrence is at an elevation of about 5,600 feet on the ridge at the head of Dike Creek. It is just south of the center of section 16, T. 4 S., R. 9 E. of the Copper River Meridian. This is locality 105 of MacKevett (1976); the location is probably accurate to within a a few thousand feet.

Commodities:

Main: Co, Cr, Ni

Other:

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of a small gabbro cupola that intrudes upper Paleozoic volcanic rocks (MacKevett, 1976; MacKevett and others, 1978). A sample of the gabbro contained 150 parts per million (ppm) cobalt, 1,000 ppm chromium, and 150 ppm nickel.

Alteration:

Age of mineralization:

Triassic(?) based on the age of gabbro elsewhere in the McCarthy C-8 quadrangle (MacKevett and others, 1978).

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Warner

Site type: Prospect

ARDF no.: MC028

Latitude: 61.7066 **Quadrangle:** MC C-8

Longitude: 143.9609

Location description and accuracy:

This prospect is on the west bank of lower Rock Creek. It is at an elevation of about 2,500 feet, 5,800 feet northwest of elevation 5282, and 1,500 feet east-southeast of the center of section 9, T. 2 S., R. 8 E. of the Copper River Meridian. This is locality 169 of MacKevett (1976) and locality 8 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Warner'.

Commodities:

Main: Cu

Other: Ag

Ore minerals: Bornite, chalcopyrite, malachite

Gangue minerals: Calcite, quartz

Geologic description:

The deposit at this prospect consists of a brecciated quartz-calcite vein up to 1 meter thick that contains minor amounts of bornite, chalcopyrite. and malachite (Moffit and Mertie, 1923; MacKevett, 1976). The vein is in Triassic Nikolai Greenstone. A sample of the mineralization contained 5 parts per million (ppm) silver and 20,000 ppm copper (MacKevett, 1976). A 25-foot-long adit explored this deposit. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamor-

phism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
A 25-foot-long adit explored this deposit.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west side of west Kuskulana Glacier)

Site type: Occurrence

ARDF no.: MC029

Latitude: 61.7064 **Quadrangle:** MC C-8

Longitude: 143.6489

Location description and accuracy:

This occurrence is on the west side of the western arm of Kuskulana Glacier. It is at an elevation of about 4,500 feet, 500 feet west of the glacier, and 3,000 feet southeast of the center of section 7, T. 2 S., R. 10 E. of the Copper River Meridian. This is locality 158 of MacKevett (1976). It is accurate to within about 1,000 feet.

Commodities:

Main: Au, Cu

Other: As, Cr, Ti

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of a 15-meter-wide altered zone that is developed along a fault that cuts Triassic Nikolai Greenstone (MacKevett, 1976). A sample of the altered material contained 0.3 part per million (ppm) gold, more than 1 percent titanium, 3,000 ppm arsenic, 300 ppm chromium, and 500 ppm copper.

Alteration:

The type of alteration is not specified.

Age of mineralization:

Triassic or younger based on the age of the host rock.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (upper Amy Creek)

Site type: Prospect

ARDF no.: MC030

Latitude: 61.7059 **Quadrangle:** MC C-8

Longitude: 143.8434

Location description and accuracy:

This prospect is is on the lower east side of the terminus of the glacier at the head of Amy Creek. It is at an elevation of about 3,800 feet, 700 feet south-southeast of the center of section 7, T. 2 S., R. 9 T. of the Copper River Meridian. This is locality 163 of MacKevett (1976) and locality 10 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Amy Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite(?), pyrite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of pyrite-bearing veins and altered zones that contain some secondary copper minerals cut Permian sedimentary rocks and Triassic gabbro (Moffit and Mertie, 1923; MacKevett, 1976). Samples of the mineralization contained up to 1.5 parts per million (ppm) silver and 2,000 ppm copper.

Alteration:

Oxidation.

Age of mineralization:

Post-Triassic; some of the host rocks of the veins are Triassic in age.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (upper Peacock Creek)

Site type: Prospects

ARDF no.: MC031

Latitude: 61.7038 **Quadrangle:** MC C-8

Longitude: 143.7621

Location description and accuracy:

MacKevett and others (1978) identify 3 prospects on the ridges above Peacock Creek. The location of this record is the central of the 3 prospects on the ridge between the glacier lobes at the head of Peacock Creek. It is at an elevation of about 5,300 feet, 2,500 feet southwest of the center of section 10, T. 2 S. R. 9 E. of the Copper River Meridian. This prospect is included in locality 162 of MacKevett (1976) and locality 12 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

These 3 prospects identified by MacKevett and others (1978) are the sites of old claims and at least some surface exploration of copper-bearing veins. The veins occur in Triassic Nikolai Greenstone which is cut by apophyses of Jurassic granodiorite (Moffit and Mertie, 1923; MacKevett, 1976). The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation?

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-

bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu? (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: None

Site Status: Inactive

Workings/exploration:
Some surface prospecting pits or trenches are probably present at these sites.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Skyscraper

Site type: Prospect

ARDF no.: MC032

Latitude: 61.7033 **Quadrangle:** MC C-8

Longitude: 143.8013

Location description and accuracy:

This prospect is probably on the old West Skyscraper claim north of Skyscraper Peak (Moffit and Mertie,1923). It is at an elevation of about 5,150 feet, 3,100 feet southeast of elevation 4620, and 3,200 feet southwest of the center of section 9, T. 2 S., R. 9 E. of the Copper River Meridian. This is locality 161 of MacKevett (1976) and locality 11 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Skyscraper'.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, native copper

Gangue minerals:

Geologic description:

The deposit at this prospect consists of chalcocite in lenses up to 6 inches thick as well as disseminated, with lesser amounts of native copper in Triassic Nikolai Greenstone (Moffit and Mertie, 1923). The deposit was explored by short adits. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored by short adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Larson

Site type: Prospect

ARDF no.: MC033

Latitude: 61.7026 **Quadrangle:** MC C-8

Longitude: 143.8772

Location description and accuracy:

This prospect is on a ridge along the south valley wall of the Kotsina River. It is at an elevation of about 5,050 feet, 5,700 feet northeast of elevation 6830 and 2,600 feet south of the center of section 12, T. 2 S., R. 8 E. of the Copper River Meridian. This is locality 168 of MacKevett (1976) and locality 9 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Larson'.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite

Gangue minerals: Quartz

Geologic description:

The deposit at this prospect consist of fractures in a fault zone cutting Triassic Nikolai Greenstone that are stained with malachite. The greenstone is locally amygdaloidal and quartz occurs in veins and as amygdule fillings (Moffit and Mertie, 1923). The deposits were explored by two adits. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-

bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by two adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (southeast of Skyscraper Peak)

Site type: Prospects

ARDF no.: MC034

Latitude: 61.6955 **Quadrangle:** MC C-8

Longitude: 143.7986

Location description and accuracy:

Several short adits explore deposits south and east of Skycraper Peak (MacKevett and others, 1978). These are probably on the old Skyscraper and Morning Star claims (Moffit and Mertie, 1923). The coordinates for this record is about 2,000 feet south-southeast of Skyscraper Peak. It is at an elevation of 5,400 feet, 2,000 feet southwest of the center of section 16, T. 2 S., R. 9 E. of the Copper River Meridian. This is locality 160 of MacKevett (1976) and locality 16 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Native copper

Gangue minerals:

Geologic description:

At the prospects in this area, native copper unaccompanied by gangue minerals occurs in Triassic Nikolai Greenstone (Moffit and Mertie, 1923). The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of lower Lime Creek)

Site type: Prospect

ARDF no.: MC035

Latitude: 61.6930 **Quadrangle:** MC C-8

Longitude: 143.9312

Location description and accuracy:

This prospect is on the east valley wall of lower Lime Creek. it is at an elevation of about 3,700 feet, 4,500 feet southwest of elevation 6830, and 1,200 feet southeast of the center of section 15, T. 2 S., R. 8 E. of the Copper River Meridian. This is locality 167 of MacKevett (1976) and locality 13 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Lime Cr., tributary to Rock Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyrite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

The deposit at this prospect consists of bornite and minor chalcopyrite in small lenses, as disseminations, and in veins in Triassic Nikolai Greenstone (Moffit and Mertie, 1923; MacKevett, 1976). The copper-bearing minerals are partly associated with quartz and epidote and with quartz-calcite veins (Moffit and Maddren, 1909; Moffit and Mertie, 1923). The deposits were explored by two adits and open cuts. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamor-

phism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospects were explored by two adits and open cuts.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Maddren, 1909; Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (head of valley of Amy Creek)

Site type: Occurrence

ARDF no.: MC036

Latitude: 61.6896 **Quadrangle:** MC C-8

Longitude: 143.8725

Location description and accuracy:

This occurrence is on the ridge crest at the head of the valley of Amy Creek. It is at an elevation of about 6,950 feet, 1,800 feet south-southeast of the center of section 13, T. 2 S., R. 8 E. of the Copper River Meridian. This is locality 166 of MacKevett (1976) and locality 14 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of a 3-meter-wide altered fault zone that cuts Triassic Nikolai Greenstone (MacKevett, 1976). A sample of the altered material contained 0.2 part per million (ppm) gold, 1.5 ppm silver, and 7,000 ppm copper.

Alteration:

Oxidation?

Age of mineralization:

Triassic or younger based on the age of the host rock.

Deposit model:

Vein?

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (upper Roaring Creek)

Site type: Prospects

ARDF no.: MC037

Latitude: 61.6831 **Quadrangle:** MC C-8

Longitude: 143.8307

Location description and accuracy:

MacKevett and others (1978) identify several prospects in the upper valley of Roaring Creek. The location of this record is the more central of these prospects. It is at an elevation of about 4,900 feet, 3,700 feet northeast of elevation 7336 (Rock), and 2,400 feet east-northeast of the center of section 19, T. 2 S., R. 9 E. of the Copper River Meridian. This is locality 159 of MacKevett (1976) and locality 15 of MacKevett and others (1978). Cobb and MacKevett (1980) included these prospects under the name 'Roaring Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, chalcopyrite, malachite

Gangue minerals:

Geologic description:

The deposit at these prospects consist of thin veins that contain small amounts of chalcopyrite, bornite, chalcocite and malachite in Permian sedimentary rocks and Triassic gabbro (Moffit and Mertie, 1923; MacKevett, 1976). They veins were explored by short adits and open cuts. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-

bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospects were explored by short adits and open cuts that are now largely caved.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Valdez

Site type: Mine

ARDF no.: MC038

Latitude: 61.6452 **Quadrangle:** MC C-8

Longitude: 143.7160

Location description and accuracy:

This mine is on the northeast valley wall of Nugget Creek. It is at an elevation of about 3,700 feet, 1,200 feet upslope of USLM No. 15, and about 1,800 feet southwest of elevation 4660. The location of the mine is shown on the McCarthy C-8 quadrangle (1995 edition) in the NE1/4 of section 2, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 139 of MacKevett (1976) and locality 18 of MacKevett and others (1978). It is accurately located. Cobb and MacKevett (1980) included this mine under the name 'Nugget Cr.'.

Commodities:

Main: Ag, Cu

Other:

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

Gangue minerals: Calcite, dolomite

Geologic description:

The deposit at this mine consists of discontinuous dolomite and calcite veins and lenses up to several feet thick that contain bornite, chalcopyrite, pyrite, and a little chalcocite and covellite (Moffit and Mertie, 1923; Van Alstine and Black, 1946). The veins and lenses are localized in a fault zone that cuts Triassic Nikolai Greenstone (Moffit and Mertie, 1923; MacKevett, 1976). A sample of the mineralization contained 200 parts per million silver and more than 2 percent copper (MacKevett, 1976). The deposits were explored and developed over 420 vertical feet by 4,000 feet of underground workings including adits, drifts, crosscuts, winzes, and shafts (Moffit and Mertie, 1923, fig. 7). A mill was located at the mine. Two carloads of high-grade, hand-sorted ore were shipped before 1916 and 160 tons of concentrate and hand-sorted ore were shipped between 1916 and 1919.

The widespread deposition of copper in Triassic greenstone and limestone in the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Age of mineralization:
Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone in the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The deposits were explored and developed over 420 vertical feet by 4,000 feet of underground workings including adits, drifts, crosscuts, winzes, and shafts (Moffit and Mertie, 1923, fig. 7). A mill was located at the mine.

Production notes:
Two carloads of high-grade, hand-sorted ore were shipped before 1916 and 160 tons of concentrate and hand-sorted ore were shipped between 1916 and 1919.

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC039

Latitude: 61.6452 **Quadrangle:** MC C-8

Longitude: 143.8745

Location description and accuracy:
This occurrence is on the east wall of a cirque at the head of Rock Creek. It is at an of elevation about 5,560 feet, 2,600 feet south of the center of section 36, T. 2 S., R. 8 E. of the Copper River Meridian. This is locality 165 of MacKevett (1976) and locality 19 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Ag, Pb, Zn

Other: Cd, Mo

Ore minerals: Galena(?), sphalerite(?)

Gangue minerals:

Geologic description:
This occurrence consists of an altered zone about 2 meters wide that is developed along a prominent steep fault that separates Triassic Nikolai Greenstone to the north from Triassic Chitistone Limestone to the south (MacKevett, 1976; MacKevett and others, 1978). A sample of the altered material contained more than 2,000 parts per million (ppm) manganese, 15 ppm silver, 70 ppm cadmium, 20 ppm molybdenum, 3,000 ppm lead, and more than 10,000 ppm zinc. The altered zone at MC043 is on the same fault as this occurrence.

Alteration:
Oxidation.

Age of mineralization:

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC040

Latitude: 61.6378 **Quadrangle:** MC C-8

Longitude: 143.8442

Location description and accuracy:

This prospect is above the southwest glacier at the head of Porcupine Creek. It is at an elevation of about 5,700 feet, 1,700 feet east-southeast of elevation 6860 and 800 feet east of the center of section 6, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 138 of MacKevett (1976) and locality 20 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Clear Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, malachite

Gangue minerals:

Geologic description:

This is one of several prospects in the area that were explored by the Great Northern Development Company in the early 1900s (Moffit and Mertie, 1923). At this prospect, minor chalcopyrite and malachite occur in thin veins and veinlets localized along faults cutting Triassic Nikolai Greenstone (MacKevett, 1976). The deposits were explored by two adits. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamor-

phism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by 2 adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Nugget Creek

Site type: Prospects

ARDF no.: MC041

Latitude: 61.6316 **Quadrangle:** MC C-8

Longitude: 143.7243

Location description and accuracy:

An unpublished National Park Service map shows mineral land holdings on and along both sides of Nugget Creek. However, the accompanying data for the National Park Service locality numbers assigned to these land holdings, WRST-131, WRST-132, and WRST-167, are not for deposits in this area. It is assumed that the Nugget Creek area is a valid mineral location. The location chosen for this record is on Nugget Creek at an elevation of about 2,100 feet, 2,500 feet south of the center of section 2, T. 3 S., R. 9 E. of the Copper River Meridian.

Commodities:

Main: Cu

Other:

Ore minerals: Native copper

Gangue minerals:

Geologic description:

An unpublished National Park Service map shows mineral land holdings on and along sides of Nugget Creek. A large block of mineral land holdings on and along Nugget Creek dates from the early 1900s (Moffit and Mertie, 1923). The first copper claims staked in the Kuskulana valley were on Nugget Creek where in 1900, James McCarthy discovered a huge native copper nugget measuring 7 feet long, 3 feet wide, and up to 1 foot thick. Other native copper nuggets to several pounds in weight were also common in this part of Nugget Creek. Although most of the work in this area was on the nearby Valdez deposit (MC038) in Triassic Nikolai Greenstone, some of the land holdings shown on the unpublished National Park Service map were probably located on the placer deposits of Nugget Creek.

Alteration:

Age of mineralization:

Quaternary.

Deposit model:
Placer deposit of native copper

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Probably some old workings and prospecting.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of lower Kuskulana Glacier)

Site type: Occurrence

ARDF no.: MC042

Latitude: 61.6312 **Quadrangle:** MC C-8

Longitude: 143.6340

Location description and accuracy:

This occurrence is on the east valley wall of lower Kuskulana Glacier. It is at an elevation of about 3,900 feet, 5,400 feet north-northwest of elevation 6610, and 2,000 feet south-southwest of the center of section 5, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 128 of MacKevett (1976) and locality 23 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Native copper, tenorite

Gangue minerals: Epidote, quartz

Geologic description:

This occurrence consists of amygdules in Triassic Nikolai Greenstone that are filled with epidote, quartz , and smaller amounts of native copper and tenorite (MacKevett, 1976). A sample of the mineralization contained 3,000 parts per million copper. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC043

Latitude: 61.6303 **Quadrangle:** MC C-8

Longitude: 143.8569

Location description and accuracy:

This prospect is at the head of Clear Creek. It is at an elevation of about 5,500 feet, 3,200 feet south-southwest of elevation 6860 and 1,600 feet east of elevation 6641. The site is in the SW1/4 of section 6, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 136 of MacKevett (1976) and locality 21 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Clear Cr.'.

Commodities:

Main: Cu?

Other:

Ore minerals: Malachite(?)

Gangue minerals:

Geologic description:

This is one of several prospects in the area that were explored by the Great Northern Development Company in the early 1900s (Moffit and Mertie, 1923). At this prospect, an adit explored a weakly mineralized zone about 3 feet wide (MacKevett, 1976). The deposit is near a fault contact between Triassic Nikolai Greenstone and Triassic Chitistone Limestone (MacKevett and others, 1978).

Alteration:

Oxidation?

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
An adit explored this deposit.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Great Northern Development Company

Site type: Prospects

ARDF no.: MC044

Latitude: 61.6279 **Quadrangle:** MC C-8

Longitude: 143.8423

Location description and accuracy:

This prospect is near the head of Clear Creek. It is at an elevation of about 5,500 feet, 2,000 feet northwest of elevation 6085 and 2,000 feet north of the center of section 7, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 137 of MacKevett (1976) and locality 22 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Clear Cr.'.

Commodities:

Main: Ag, Cu

Other: Au

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

Gangue minerals: Calcite

Geologic description:

This is one of several prospects in the Clear Creek area that were explored by the Great Northern Development Company in the early 1900s (Moffit and Mertie, 1923). The deposits at this location were explored between 1914 and 1916 by several adits and related underground workings totaling a few thousand feet in length (Moffit and Mertie, 1923; MacKevett, 1976). Altered veins to 2 feet wide are localized along faults that cut Triassic Nikolai Greenstone and small intrusions of Jurassic granodiorite (Van Alstine and Black, 1946; MacKevett, 1976). The vein width of 2 meters reported by MacKevett (1976) is much wider than that of early reports and may be a typographical error. Some pyrite and chalcopyrite is locally disseminated in the granodiorite. The altered fault zones and associated veins contain small amounts of calcite, pyrite, chalcopyrite, bornite, limonite, malachite, and azurite (Van Alstine and Black, 1946). A chip sample of the mineralization contained 0.5 part per million (ppm) gold, 5 ppm silver, and 20,000 ppm copper (MacKevett, 1976). Some exploration took place in this area as late as the 1970s. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and

others, 1980).

Alteration:
Oxidation.

Age of mineralization:
Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
This is one of several prospects in the Clear Creek area that were explored by the Great Northern Development Company in the early 1900s (Moffit and Mertie, 1923). The deposits at this location were explored between 1914 and 1916 by several adits and related underground workings totaling a few thousand feet in length (Moffit and Mertie, 1923; MacKevett, 1976). Some exploration took place in this area as late as the 1970s.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Van Alstine and Black, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Blackburn

Site type: Prospect

ARDF no.: MC045

Latitude: 61.6215 **Quadrangle:** MC C-8

Longitude: 143.7897

Location description and accuracy:

This prospect is on the west valley wall of Porcupine Creek. It is at an elevation of about 4,200 feet, 4,200 feet northeast of elevation 6437, and 1,200 feet southwest of the center of section 9, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 135 of MacKevett (1976) and locality 24 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other: Au?

Ore minerals: Chalcopyrite, malachite, pyrite

Gangue minerals:

Geologic description:

This deposit consists of malachite-stained fault zones that contain chalcopyrite, pyrite, and possibly gold; the faults cut Triassic Nikolai Greenstone intruded by a diorite apophyses of a Jurassic pluton (Moffit and Mertie, 1923; MacKevett, 1976). The deposits were explored by short adits and opencut. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by short adits and opencut.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (upper Strelna Creek)

Site type: Prospect

ARDF no.: MC046

Latitude: 61.6193 **Quadrangle:** MC C-8

Longitude: 143.9845

Location description and accuracy:

This prospect is on the west bank of upper Strelna Creek. It is at an elevation of about 3,700 feet, 3,900 feet west-southwest of elevation 5427, and 2,500 feet west-southwest of the center of section 9, T. 3 S., R. 8 E. of the Copper River Meridian. This is locality 147 of MacKevett (1976) and locality 19 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Strelna Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite, pyrite

Gangue minerals: Calcite

Geologic description:

This deposit consists of a 6- to 8-foot-wide altered fault zone that cuts Triassic Nikolai Greenstone (Moffit and Maddren, 1909; MacKevett, 1976). The fault zone contains minor pyrite-calcite veins and malachite staining. An old prospect pit is present at this locality. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-

bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu? (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: None

Site Status: Inactive

Workings/exploration:
An old prospect pit is present at this locality.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Maddren, 1909; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Maddren, 1909

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC047

Latitude: 61.6111 **Quadrangle:** MC C-8

Longitude: 143.8245

Location description and accuracy:

This prospect is on the east valley wall of Clear Creek. It is at an elevation of about 5,000 feet, 3,000 feet west of elevation 6437, and 2,500 feet northwest of the center of section 17, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 133 of MacKevett (1976) and locality 25 of MacKevett and others (1978). It is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite

Gangue minerals:

Geologic description:

This is one of several prospects in the Clear Creek area explored by the Great Northern Development Company during the early 1900s (Moffit and Mertie, 1923). At this prospect, an adit explored a malachite-stained zone that probably is along a fault in Triassic Nikolai Greenstone (MacKevett, 1976). The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
This is one of several prospects in the Clear Creek area (also see MC040, MC043, and MC044) explored by the Great Northern Development Company during the early 1900s (Moffit and Mertie, 1923). An adit explored the deposit at this prospect.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Pierson

Site type: Prospect

ARDF no.: MC048

Latitude: 61.6057 **Quadrangle:** MC C-8

Longitude: 143.6731

Location description and accuracy:

This prospect is southeast of the terminus of Kuskulana Glacier. It is at an elevation of about 4,200 feet, 2,800 feet northwest of elevation 5805, and 1,200 feet southwest of the center of section 18, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 126 of MacKevett (1976) and locality 26 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Ag, Au

Other: As, Cu, Zn

Ore minerals: Chalcopyrite, gold, malachite, pyrite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of a 2- to 3-foot-thick, malachite-stained shear zone that contains pyrite, chalcopyrite, and free gold (Moffit and Mertie, 1923; MacKevett, 1976). The shear zone is between Triassic Nikolai Greenstone and a 30-foot-thick, Tertiary(?), brecciated latite dike that intrudes along the contact of the Nikolai Greenstone and the Triassic Chitistone Limestone. A sample of the sheared rock contained 0.1 part per million (ppm) gold, 1.5 ppm silver, 1,000 ppm arsenic, 200 ppm copper, and 700 ppm zinc. The deposit was explored by a short adit and opencut.

Alteration:

Oxidation.

Age of mineralization:

Tertiary(?); the felsic dike associated with the deposit is probably Tertiary.

Deposit model:

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored by a short adit and opencut.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of upper Slatka Creek)

Site type: Occurrence

ARDF no.: MC049

Latitude: 61.6025 **Quadrangle:** MC C-8

Longitude: 143.6337

Location description and accuracy:

This occurrence is on the ridge south of the head of Slatka Creek. It is at an elevation of about 6,300 feet, 2,300 feet southeast of the center of section 29, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 123 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Au

Other: Co, Mo

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of a vein about 1 meter wide that is localized along a fault between Triassic Nikolai Greenstone and Triassic Chitistone Limestone (MacKevett, 1976). A sample of the vein contained 0.06 part per million (ppm) gold, 300 ppm cobalt, and 50 ppm molybdenum.

Alteration:

Age of mineralization:

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of east fork of Strelna Creek)

Site type: Occurrence

ARDF no.: MC050

Latitude: 61.6012 **Quadrangle:** MC C-8

Longitude: 143.9570

Location description and accuracy:

This occurrence is north of the lower east fork of upper Strelna Creek. It is at an elevation of about 3,500 feet, 2,000 feet north-northeast of the center of section 21, T. 3 S., R. 8 E. of the Copper River Meridian. This is locality 146 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Au

Other: As, B

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of veins as much as 6 inches thick that cut Triassic gabbro (MacKevett, 1976; MacKevett and others, 1978). A sample of the veins contained 0.2 part per million (ppm) gold, 700 ppm arsenic, and more than 2,000 ppm boron.

Alteration:

Age of mineralization:

Triassic or younger based on the age of the gabbro host rock.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of lower east fork of Strelna Creek)

Site type: Occurrence

ARDF no.: MC051

Latitude: 61.6007 **Quadrangle:** MC C-8

Longitude: 143.9460

Location description and accuracy:

This occurrence is north of the lower east fork of upper Strelna Creek. It is at an elevation of about 3,700 feet, 3,000 feet northwest of the center of section 22, T. 3 S., R. 8 E. of the Copper River Meridian. This is locality 145 of MacKevett (1976; the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other: Bi

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of irregular altered zones in Permian marble (MacKevett, 1976). A sample of the altered material contained 500 parts per million (ppm) copper and 10 ppm bismuth.

Alteration:

The type of alteration is not specified.

Age of mineralization:

Permian or younger based on the age of the marble host rock.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of upper Slatka Creek)

Site type: Occurrence

ARDF no.: MC052

Latitude: 61.5993 **Quadrangle:** MC c-8

Longitude: 143.6523

Location description and accuracy:

This occurrence is on the ridge north of upper Slatka Creek. It is at an elevation of about 6,200 feet, 2,400 feet south of the center of section 17, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 125 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu, Zn

Other:

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of patchy altered zones that are locally present in Triassic Nikolai Greenstone (MacKevett, 1976). A sample of the altered material contained 700 parts per million (ppm) copper and 500 ppm zinc.

Alteration:

The type of alteration was not specified.

Age of mineralization:

Triassic or younger based on the age of the host rocks.

Deposit model:

Disseminated sulfides

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east fork of Strelna Creek)

Site type: Occurrence

ARDF no.: MC053

Latitude: 61.5921 **Quadrangle:** MC C-8

Longitude: 143.9367

Location description and accuracy:

This occurrence is at an elevation of about 3,200 feet on the south valley wall of the east fork of Strelna Creek. It is about 800 feet south of the center of section 22, T. 3 S., R. 8 E. of the Copper River Meridian. This is locality 143 of MacKevett (1976) and locality 27 of MacKevett and others (1978).

Commodities:

Main: Cu

Other: Ag, B, Mo

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of an iron-stained altered zone about 3 feet wide that cuts Permian argillite (MacKevett, 1976). A sample of the altered rock contained 1 part per million (ppm) silver, 150 ppm boron, 1,500 ppm copper, and 5 ppm molybdenum.

Alteration:

Oxidation.

Age of mineralization:

Permian or younger based on the age of the host rock.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (on east fork of Strelna Creek)

Site type: Occurrence

ARDF no.: MC054

Latitude: 61.5913 **Quadrangle:** MC C-8

Longitude: 143.9577

Location description and accuracy:
This occurrence is at an elevation of about 2,750 feet on the east fork of upper Strelna Creek. It is about 2,000 feet southeast of the center of section 21, T. 3 S., R. 8 E. of the Copper River Meridian. This is locality 144 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other: Ag

Ore minerals:

Gangue minerals:

Geologic description:
This occurrence consists of a reticulated network of iron-stained veinlets in Pennsylvanian metavolcanic rocks (MacKevett, 1976). A sample of the mineralized rock contained 1 part per million (ppm) silver and 1,500 ppm copper.

Alteration:
Oxidation.

Age of mineralization:
Pennsylvanian or younger based on the age of the host rocks.

Deposit model:
Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (between Sheep and Clear creeks)

Site type: Occurrence

ARDF no.: MC055

Latitude: 61.5863 **Quadrangle:** MC C-8

Longitude: 143.8356

Location description and accuracy:

This occurrence is near the south end of the ridge between Clear Creek and Sheep Creek. It is at an elevation of about 4,200 feet, 800 feet northwest of elevation 4270 and 2,800 feet northeast of the center of section 30, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 132 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite(?)

Gangue minerals:

Geologic description:

This occurrence consists of a 2-foot-wide vein that cuts Triassic Chitistone Limestone (MacKevett, 1976). A sample of this vein contained 1,000 parts per million (ppm) chromium and 100 ppm lanthanum.

Alteration:

Age of mineralization:

Triassic or younger based on the age of the host rocks.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of head of Dry Creek)

Site type: Occurrences

ARDF no.: MC056

Latitude: 61.5784 **Quadrangle:** MC C-8

Longitude: 143.9069

Location description and accuracy:

These occurrences are on the ridge east of the head of Dry Creek. The coordinates for this record is based on is locality 29 of MacKevett and others (1978). This occurrence is at an elevation of about 5,050 feet, 700 feet north of the center of section 26, T. 3 S., R. 8 E. of the Copper River Meridian. This record includes localities 141 and 142 of MacKevett (1976).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, malachite, native copper(?)

Gangue minerals:

Geologic description:

At least two occurrences of copper-bearing minerals in Triassic Nikolai Greenstone have been identified in this area (localities 141 and 142 of MacKevett, 1976). At locality 141, a sample of amygdaloidal greenstone contained 1,500 parts per million copper and may contain some native copper. At locality 142, bornite and malachite occur in several subparallel thin veins and veinlets cutting greenstone. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-

bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1980; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Kuskulana Pass)

Site type: Prospect

ARDF no.: MC057

Latitude: 61.5753 **Quadrangle:** MC C-8

Longitude: 143.6290

Location description and accuracy:

This prospect is near the head of the south tributary to Slatka Creek and north of Kuskulana Pass. It is at an elevation of 4,500 feet, 2,300 feet north of elevation 5075 and 500 feet northwest of the center of section 32, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 34 of MacKevett and others (1978); the location is accurate to within about 100 feet.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

MacKevett and others (1978) identify this as a placer gold prospect. Bedrock in the area is Triassic limestone, and a gold-bearing skarn (MC057) is located about 1,500 feet to the southwest (MacKevett and others, 1978).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

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

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

39a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Some surface workings are probably present.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and others, 1978.

Primary reference: MacKevett and others, 1978

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west of Squaw Creek)

Site type: Occurrence

ARDF no.: MC058

Latitude: 61.5698 **Quadrangle:** MC C-8

Longitude: 143.8940

Location description and accuracy:

This occurrence is west of Squaw Creek on the north valley wall of the Kuskulana River. It is at an elevation of about 3,900 feet, 2,800 feet east of elevation 4765, and 2,700 feet northeast of the center of section 35, T. 3 S., R. 8 E. of the Copper River Meridian. This is locality 140 of MacKevett (1976) and locality 30 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Ag, Cu

Other: Mo

Ore minerals: Bornite

Gangue minerals:

Geologic description:

This occurrence consists of bornite-bearing veins up to 6 centimeters thick that are localized in a 2-meter-wide, altered fault zone cutting Triassic Nikolai Greenstone (MacKevett, 1976). A sample of the mineralization contained 200 parts per million (ppm) silver, more than 20,000 ppm copper, and 7 ppm molybdenum. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC059

Latitude: 61.5673 **Quadrangle:** MC C-8

Longitude: 143.6358

Location description and accuracy:

MacKevett and others (1978) identify three prospects on the ridges above Peacock Creek. The coordinates are the northeastern of the 3 prospects. It is at an elevation of about 5,300 feet, 1,300 feet north-northeast of the center of section 10, T. 2 S. R. 9 E. of the Copper River Meridian. This prospect is included in locality 162 of MacKevett (1976) and locality 12 of MacKevett and others (1978). The location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

The three prospects identified by MacKevett and others (1978) are the sites of old claims and at least some surface exploration of copper-bearing veins in Triassic Nikolai Greenstone (Moffit and Mertie, 1923; MacKevett, 1976). The greenstone is cut by apophyses of Jurassic granodiorite. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-

bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Some surface prospecting pits or trenches are probably present at these prospects.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): London and Cape

Site type: Prospect

ARDF no.: MC060

Latitude: 61.5666 **Quadrangle:** MC C-8

Longitude: 143.7166

Location description and accuracy:

This prospect is on the ridge between MacDougal and Trail creeks. It is at an elevation of about 4,600 feet, 700 feet northeast of elevation 5120, and about 1,500 feet east-northeast of the center of section 35, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 129 of MacKevett (1976) and locality 33 of MacKevett and others (1978). The location is accurate to within 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'London & Cape (Co.)'.

Commodities:

Main: Cu

Other: Ag, Mo

Ore minerals: Chalcopyrite, pyrite

Gangue minerals:

Geologic description:

This prospect consists of pyrite-and chalcopyrite-bearing veinlets and disseminations in locally altered Jurassic granodiorite (MacKevett, 1976; MacKevett and others, 1978). Samples of the mineralization contain up to 1.5 parts per million (ppm) silver, 20,000 ppm copper, and 70 ppm molybdenum but most samples contain less than 1,000 ppm copper. Fourteen claims were patented in 1909 and early exploration included a 245-foot-long adit (Moffit and Mertie, 1923). Some exploration took place in the 1970s (MacKevett, 1976).

Alteration:

Alteration is present but it has not been described. Iron-staining is probably present.

Age of mineralization:

Jurassic. The age of the host intrusive rock is Late Jurassic.

Deposit model:

Porphyry Cu (Cox and Singer, 1986; model 17)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
17

Production Status: None

Site Status: Inactive

Workings/exploration:
Fourteen claims were patented in 1909 and early exploration included a 245-foot-long adit (Moffit and Mertie, 1923). Some exploration took place in the 1970s (MacKevett, 1976).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Kuskulana Pass)

Site type: Occurrence

ARDF no.: MC061

Latitude: 61.5640 **Quadrangle:** MC C-8

Longitude: 143.6462

Location description and accuracy:

This occurrence is on the south tributary to Slatka Creek and north of Kuskulana Pass (MacKevett and others, 1978). It is at an elevation of about 4,200 feet, 2,300 feet northwest of elevation 5075 and 4,000 feet north-northwest of Kuskulana Pass. The site is in the SW1/4 of section 32, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 35 of MacKevett and others (1978) and locality 121 of MacKevett (1976). The location is accurate to within about 100 feet.

Commodities:

Main: Au, Cu

Other: Fe

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

Gangue minerals:

Geologic description:

This occurrence consists of an iron-rich skarn (assumed to be magnetite-rich and to contain disseminated chalcopyrite) that is developed in Triassic marble adjacent to a small Jurassic granodiorite pluton (MacKevett and others, 1978; MacKevett, 1976). A sample of the skarn contained 0.06 parts per million (ppm) gold, 1,500 ppm copper, 7 ppm molybdenum, and more than 20 percent iron (MacKevett, 1976).

Alteration:

Age of mineralization:

The age of a nearby intrusive rock is inferred to be Jurassic (MacKevett and others, 1978).

Deposit model:

Fe skarn (Cox and Singer, 1986; model 18d)

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

18d

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): War Eagle

Site type: Prospect

ARDF no.: MC062

Latitude: 61.5602 **Quadrangle:** MC C-8

Longitude: 143.7422

Location description and accuracy:

This prospect is on the west side of MacDougal Creek. It is at an elevation of about 3,500 feet, 4,200 feet north of elevation 5710, and 4,000 feet southwest of elevation 5120. The site is in the SE1/4 of section 34, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 130 of MacKevett (1976) and locality 32 of MacKevett and others (1978). The location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'War Eagle'.

Commodities:

Main: Cu

Other: Fe

Ore minerals: Chalcopyrite, magnetite, pyrite, pyrrhotite

Gangue minerals: Calcite, chlorite, diopside, epidote, garnet, quartz

Geologic description:

This deposit consists of masses of magnetite and garnet up to 25 feet wide that are associated with sulfide-bearing diopside skarn in Triassic Chitistone Limestone adjacent to a Jurassic granodiorite pluton (Moffit and Mertie, 1923; MacKevett, 1976). The skarn assemblage includes calcite, chlorite, epidote, garnet, diopside, and quartz. The sulfide assemblage in the skarn includes pyrite, pyrrhotite, and chalcopyrite. A 5-foot-long channel sample across an outcrop of massive magnetite contained 62.07 percent iron, but the total resource was estimated to be less than 10,000 tons (Van Alstine and Black, 1946). A sample of skarn contained 1,000 parts per million copper (MacKevett, 1976). The deposit was explored by a 100-foot-long adit and surface cuts.

Alteration:

Calc-silicate replacement of limestone.

Age of mineralization:

The Fe skarn is probably related to a Late Jurassic intrusive body.

Deposit model:
Fe skarn (Cox and Singer, 1986; model 18d)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18d

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored by a 100-foot-long adit and surface cuts.

Production notes:

Reserves:
A 5-foot-long channel sample across an outcrop of massive magnetite contained 62.07 percent iron, but the total resource was estimated to be less than 10,000 tons (Van Alstine and Black, 1946).

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Copper Queen; Rarus

Site type: Prospect

ARDF no.: MC063

Latitude: 61.5582 **Quadrangle:** MC C-8

Longitude: 143.7581

Location description and accuracy:

This prospect is on the east valley wall of the Kuskulana River between MacDougal and Berg Creeks. It is at an elevation of about 3,300 feet, 5,100 feet northwest of elevation 5710 and 2,400 feet south-southwest of the center of section 34, T. 3 S., R. 9 E. of the Copper River Meridian. This is locality 131 of MacKevett (1976) and locality 31 of MacKevett and others (1978). It is located to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Copper Queen'.

Commodities:

Main: Cu

Other: Fe

Ore minerals: Chalcopyrite, magnetite, pyrite, pyrrhotite

Gangue minerals: Chlorite, diopside, garnet

Geologic description:

This deposits consists of veinlets and small irregular bodies of magnetite, pyrrhotite, pyrite, and chalcopyrite in faulted, silicified, and garnetized Triassic Chitistone Limestone adjacent to Jurassic granitic rocks (Moffit and Mertie, 1923; MacKevett, 1976). The deposit shows iron-staining and minor copper-staining over a width of 100 feet. It was explored with a 433-foot-long adit and a 50-foot-long crosscut (Moffit and Mertie, 1923; Van Alstine and Black, 1946). Near the portal, the marble contains diopside, garnet, and chlorite.

Alteration:

Calc-silicate replacement of limestone. Oxidation.

Age of mineralization:

The skarn is probably related to a nearby Late Jurassic intrusive body.

Deposit model:

Fe skarn (Cox and Singer, 1986; model 18d)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
18d

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored with a 433-foot-long adit and a 50-foot-long crosscut.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Midas

Site type: Mine

ARDF no.: MC064

Latitude: 61.5522 **Quadrangle:** MC C-8

Longitude: 143.7873

Location description and accuracy:

This mine is on the east valley wall of the Kuskulana River, 500 to 2,000 feet southwest of Berg Creek. The site is shown as a mine symbol on the McCarthy C-8 quadrangle (1995 edition), about 500 feet southwest of Berg Creek. It is at an elevation of about 2,750 feet , 4,000 feet north of elevation 5050. The mine is in the NW1/4 of section 4, T. 4 S., R. 9 E. of the Copper River Meridian. This is localities 107 and 108 of MacKevett (1976) and locality 36 of MacKevett and others (1978). Cobb and MacKevett (1980) included this mine under the name 'Berg Cr.'.

Commodities:

Main: Ag, Au, Cu

Other: As, Co, Mo

Ore minerals: Chalcopyrite, gold, magnetite, pyrite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

The Midas mine has lower workings in Jurassic plutonic rocks and Triassic Chitistone Limestone and upper workings in the Triassic Nizina Limestone (MacKevett and others, 1978). The limestone is adjacent to a Jurassic granodiorite and quartz diorite pluton and is contact metamorphosed. The contact is very irregular and alternating intrusive rocks and limestone were encountered in the underground workings (Moffit and Mertie, 1923). The mine was explored by several adits, raises, winzes, and drifts (Moffit and Mertie, 1923, fig. 8).

At the lower and main workings of the mine, gold-bearing quartz-calcite veins, and magnetite and epidote skarn with irregularly distributed pyrite and chalcopyrite occur in Triassic Chitistone Limestone (Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976). The principal vein deposit is in granodiorite (Moffit and Mertie, 1923). It strikes N70E and dips 45S. It is a banded quartz-calcite vein with pyrite and chalcopyrite. A sample of vein material contained 8 parts per million (ppm) gold, 10 ppm silver, 1,000 ppm copper, and 20 ppm molybdenum (MacKevett, 1976). A sample of skarn from the lower workings contained 0.6 ppm gold, 1.5 ppm silver, 20,000 ppm cop-

per, and 500 ppm cobalt.

At the upper workings, disseminations and small masses of magnetite, pyrite, and chalcopyrite occur in quartz veins and skarn bodies in metamorphosed Triassic Nizina Limestone. A sample of the vein material contained more than 10,000 parts per million arsenic.

Alteration:

Calc-silicate replacement of limestone. The plutonic rocks are altered along the veins but the type of alteration is not described.

Age of mineralization:

Probably Jurassic based on the age of the pluton associated with the deposit.

Deposit model:

Polymetallic vein; Cu (?) skarn (Cox and Singer, 1986; model 22c; 18b)

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

22c, 18b (?)

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

The mine was explored by several adits, raises, winzes, and drifts (Moffit and Mertie, 1923, fig. 8).

Production notes:

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Calcite

Site type: Prospect

ARDF no.: MC065

Latitude: 61.5450 **Quadrangle:** MC C-8

Longitude: 143.7230

Location description and accuracy:

This prospect is at the head of MacDougal Creek. It is at an elevation of about 4,950 feet, 2,500 feet north-northwest of elevation 5975, and 1,700 feet southeast of the center of section 2, T. 4 S. R. 9 E. of the Copper River Meridian. This is locality 106 of MacKevett (1976) and locality 37 of MacKevett and others, 1978). The location is accurate to within about 100 feet. This prospect was included by Cobb and MacKevett (1980) under the name 'Calcite'.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, malachite, pyrite

Gangue minerals: Serpentine

Geologic description:

This prospect consists of a brecciated fault zone along the contact of altered Triassic limestone and granodiorite; the fault zone contains sparse amounts of pyrite, chalcopyrite, and malachite (Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976). The altered limestone is bleached and contains magnesite, dolomite, and seams of calcite. The fault zone also contains abundant serpentine minerals, and pods and veins of serpentine occur in the limestone (Van Alstine and Black, 1946; MacKevett, 1976).

Alteration:

Dolomitization(?); serpentine veining and replacement.

Age of mineralization:

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored by a short adit.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of upper Slatka Creek)

Site type: Occurrence

ARDF no.: MC066

Latitude: 61.5214 **Quadrangle:** MC C-8

Longitude: 143.7547

Location description and accuracy:
This occurrence is on the ridge north of upper Slatka Creek. It is at an elevation of 5,400 feet, 2,800 feet northeast of the center of section 19, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 124 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Mo

Other:

Ore minerals:

Gangue minerals:

Geologic description:
This occurrence consists of a thin altered zone at the contact of Triassic Nikolai Greenstone and a felsic intrusion (MacKevett, 1976). A sample of the altered material contained 70 parts per million molybdenum.

Alteration:
The type of alteration is not specified.

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Kinney-Golden

Site type: Prospect

ARDF no.: MC067

Latitude: 61.5126 **Quadrangle:** MC C-8

Longitude: 143.6350

Location description and accuracy:

This prospect is south of upper Chokosna River. It is at an elevation of about 4,100 feet, about 2,000 feet north of the center of section 20, T. 4 S., R. 10 E. of the Copper River Meridian. This is locality 104 of MacKevett (1976); the location is accurate to within about 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Kinney-Golden'.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite, malachite(?)

Gangue minerals:

Geologic description:

This prospect consists of chalcopyrite and secondary copper-bearing minerals that are localized along subsidiary faults near a major thrust fault (Moffit, 1918; MacKevett, 1976). The faults cut Triassic Nikolai Greenstone and the lower member of the Triassic and Jurassic(?) McCarthy Formation (MacKevett and others, 1978). The deposits were explored by an adit and trenches.

Alteration:

Oxidation.

Age of mineralization:

Jurassic or younger based on the age of the host rocks.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by an adit and trenches.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1918; MacKevett, 1976; MacKevett and others, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit, 1918

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Big Horn; Finch

Site type: Prospect

ARDF no.: MC068

Latitude: 61.6565 **Quadrangle:** MC C-7

Longitude: 143.5958

Location description and accuracy:

This prospect is on the north valley wall of Kuskulana Glacier. It is at an elevation of about 4,500 feet, 5,200 feet southwest of elevation 6940, and 1,700 feet from Kuskulana Glacier. The prospect is near the northwest corner of section 33, T. 2 S., R. 10 E. of the Copper River Meridian. This is locality 157 of MacKevett (1976); the location is accurate to within about 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Big Horn'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, malachite

Gangue minerals: Quartz

Geologic description:

The deposit at this prospect consists of bornite-, chalcocite-, and malachite-bearing veins and pods in strongly faulted Triassic Nikolai Greenstone (MacKevett, 1976). One disk-shaped bornite-chalcocite-quartz mass was up to 16 feet across (Moffit and Mertie, 1923; Van Alstine and Black, 1946). The deposits were explored by several short adits and numerous surface workings. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamor-

phism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by several adits and surface workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; Van Alstine and Black, 1946; MacKevett, 1976; Cobb and MacKevett, 1980; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Mayflower

Site type: Prospect

ARDF no.: MC069

Latitude: 61.6309 **Quadrangle:** MC C-7

Longitude: 143.5995

Location description and accuracy:

This prospect is on the west wall of a small cirque valley south of Kuskulana Glacier (Winkler and MacKevett, 1981). It is at an elevation of about 4,600 feet, 4,500 feet west of elevation 6310, and 2,500 feet from Kuskulana Glacier. The site is in the northwest corner of section 9, T. 3 S., R. 10 E. of the Copper River Meridian. This is locality 127 of MacKevett (1976), and Cobb and MacKevett (1980) included it under the name 'Mayflower'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, malachite(?)

Gangue minerals: Epidote, quartz

Geologic description:

The deposit at this prospect consists of bornite, chalcocite, and secondary copper minerals (assumed to be mostly malachite) that are associated with quartz and epidote in narrow veins up to 12 inches thick (Moffit and Mertie, 1923; MacKevett, 1976). The veins are localized along faults cutting Triassic Nikolai Greenstone. The deposits were explored by short adits and open cuts. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamor-

phism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by short adits and open cuts.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Mertie, 1923; MacKevett, 1976; Cobb and MacKevett, 1980; Silberman and others, 1980; Winkler and MacKevett, 1981; MacKevett and others, 1997.

Primary reference: Moffit and Mertie, 1923

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (near head of Lakina Glacier)

Site type: Occurrence

ARDF no.: MC070

Latitude: 61.6248 **Quadrangle:** MC C-7

Longitude: 143.2948

Location description and accuracy:

This occurrence is on the south end of a large nunatak near the head of Lakina Glacier. It is at an elevation of about 5,600 feet, 2,000 feet west-northwest of elevation 6830 and 8,000 feet southwest of elevation 8597. It is in the NE1/4 of section 7, T. 3 S., R. 12 E. of the Copper River Meridian. This is locality 119 of MacKevett (1976); the location is accurate to within about 500 feet.

Commodities:

Main: Cu

Other: Ag, Cr

Ore minerals: Malachite(?)

Gangue minerals:

Geologic description:

This occurrence consists of secondary copper minerals (assumed to be mostly malachite) in sheared Triassic Nikolai Greenstone (MacKevett, 1976). A sample contained 7 parts per million (ppm) silver, 500 ppm chromium, and 15,000 ppm copper. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Lakina

Site type: Prospect

ARDF no.: MC071

Latitude: 61.5586 **Quadrangle:** MC C-7

Longitude: 143.3964

Location description and accuracy:

This prospect is on the west valley wall of upper Lakina River. It is at an elevation of about 4,600 feet, 4,500 feet east-southeast of elevation 5710, and 8,800 feet north-northwest of the confluence of Mill Creek and Lakina River. The site is just inside the center of the south boundary of section 34, T. 3 S., R. 11 E. of the Copper River Meridian. This is locality 101 of MacKevett (1976); the location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Lakina R.'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, bornite, chalcocite, covellite, malachite, native copper

Gangue minerals:

Geologic description:

This prospect consists of two shear zones, each less than 1 meter thick, that contain chalcocite, bornite, covellite, malachite, and azurite (Moffit and Maddren, 1909; MacKevett, 1976). The shear zones cut Triassic Nikolai Greenstone and a nearby brecciated flow top in the Nikolai contains native copper. The deposits were explored by numerous surface workings and an adit. Some exploration was done as recently as the 1950s (MacKevett, 1976).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
The deposits were explored by numerous surface workings and an adit. Some exploration was done as recently as the 1950s (MacKevett, 1976).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Maddren, 1909; MacKevett, 1976; Silberman and others, 1980; Cobb and MacKevett, 1980; Winkler and MacKevett, 1981; MacKevett and others, 1997.

Primary reference: Moffit and Maddren, 1909

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Elephants Tail

Site type: Prospect

ARDF no.: MC072

Latitude: 61.5178 **Quadrangle:** MC C-7

Longitude: 143.3609

Location description and accuracy:
An unpublished National Park Service map locates this prospect on an unnamed east tributary to the Lakina River. It is at an elevation of about 2,550 feet, 1,700 feet southeast of the center of section 14, T. 4 S., R. 11 E. of the Copper River Meridian. This is National Park Service locality WRST-161 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au, Cu

Other:

Ore minerals: Gold, native copper(?)

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold and copper prospect. Bedrock in the area is Mesozoic sedimentary rocks locally cut by Tertiary felsic intrusions (Winkler and MacKevett, 1981).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Winkler and MacKevett, 1981.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west valley wall of Kennicott Glacier)

Site type: Occurrence

ARDF no.: MC073

Latitude: 61.6194 **Quadrangle:** MC C-6

Longitude: 143.1581

Location description and accuracy:
This occurrence is on the west valley wall of Kennicott Glacier. It is at an elevation of about 4,300 feet, 1,300 feet north of elevation 5780 and 1,000 feet west-southwest of the center of section 12, T. 3 S., R. 12 E. of the Copper River Meridian. This is locality 120 of MacKevett (1976); the location is accurate to within about 500 feet.

Commodities:

Main: Sb

Other:

Ore minerals: Stibnite(?)

Gangue minerals:

Geologic description:
This occurrence consists of a thin, antimony-bearing vein that cuts Triassic Chitistone Limestone (MacKevett, 1972, 1976). A sample of the vein contained 2,000 parts per million antimony.

Alteration:

Age of mineralization:
Triassic or younger; the age of the host rock is Late Triassic but this antimony-bearing deposit could be related to Tertiary igneous activity in the region.

Deposit model:
Antimony vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Hidden Creek)

Site type: Prospect

ARDF no.: MC074

Latitude: 61.5642 **Quadrangle:** MC C-6

Longitude: 143.1417

Location description and accuracy:

This prospect is on the north valley wall of Hidden Creek across from the mouth of Glacier Gulch. It is at an elevation of 4,300 feet, 2,800 feet south-southeast of elevation 6514 and 1,700 feet east-southeast of the center of section 36, T. 3 S., R. 12 E. of the Copper River Meridian. This is locality 118 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, malachite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of a narrow vein of malachite and minor chalcocite that is localized along a fault cutting Triassic Nikolai Greenstone (MacKevett, 1972, 1976). Exploration of this deposit, probably mostly by surface workings, occurred as recently as the 1970s. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Exploration of this deposit, probably mostly by surface workings, occurred as recently as the 1970s.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC075

Latitude: 61.5620 **Quadrangle:** MC C-6

Longitude: 143.1826

Location description and accuracy:

This prospect is the westernmost of several along the south valley wall of Hidden Creek (MacKevett, 1972). It is at an elevation of about 4,500 feet, east of the toe of a small glacier, 2,500 feet southeast of elevation 5025 in the SE1/4 of section 35, T. 3 S., R. 12 E. of the Copper River Meridian. This is locality 116 of MacKevett (1976).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcanthite, malachite

Gangue minerals:

Geologic description:

This prospect is the westernmost of several on the south valley wall of Hidden Creek (MacKevett, 1972). Here, malachite, chalcanthite, and minor bornite occur along faults that cut Triassic Nikolai Greenstone near the contact with overlying Triassic Chitistone Limestone. A short adit and surface workings explored the deposits. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
A short adit and surface pits explored this prospect.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west side of Donoho Peak)

Site type: Prospect

ARDF no.: MC076

Latitude: 61.5594 **Quadrangle:** MC C-6

Longitude: 142.9785

Location description and accuracy:

This prospect is on the south end of the ridge between Kennicott and Root Glaciers (MacKevett, 1972). It is at an elevation of about 5,400 feet, 1,500 feet northwest of Donoho Peak (elevation 6696) and 4,500 feet east of Kennicott Glacier. This is locality 115 of MacKevett (1976). It is accurate to within a few hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite(?), chalcocite, malachite(?)

Gangue minerals:

Geologic description:

This prospect consists of sparsely distributed secondary copper minerals and chalcocite that are localized along a fault (MacKevett, 1976). The prospect which is explored by a short adit is in Triassic Chitistone Limestone near the contact with underlying Triassic Nikolai Greenstone (MacKevett, 1972).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored by a short adit.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC077

Latitude: 61.5581 **Quadrangle:** MC C-6

Longitude: 143.1702

Location description and accuracy:

This prospect is the easternmost of several along the south valley wall of Hidden Creek (MacKevett, 1972). It is at an elevation of about 4,400 feet, 3,200 feet north-northeast of elevation 6610 near the southeast corner of section 35, T. 3 S., R. 12 E. of the Copper River Meridian. This is locality 117 of MacKevett (1976). The location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, malachite

Gangue minerals:

Geologic description:

This prospect consists of secondary copper minerals (assumed to be mostly malachite) and scattered bornite along faults in the Triassic Nikolai Greenstone (MacKevett, 1976). The deposits were explored by an adit about 100 feet long and by numerous surface workings. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by an adit about 100 feet long and by numerous surface workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Regal

Site type: Mine

ARDF no.: MC078

Latitude: 61.5565 **Quadrangle:** MC C-6

Longitude: 142.9716

Location description and accuracy:

The Regal mine is on the south end of the ridge between Kennicott and Root glaciers (MacKevett, 1972). It is at an elevation of about 5,450 feet, 1,000 feet south of Donoho Peak (elevation 6696) and 5,000 feet east of Kennicott Glacier. The site is 1,500 feet north of the center of section 1, T. 4 S., R. 13 E. of the Copper River Meridian. This is locality 97 of MacKevett (1976). The mine location is shown on the McCarthy C-6 quadrangle (1993 edition).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, malachite

Gangue minerals:

Geologic description:

The Regal mine is at the contact of Triassic Nikolai Greenstone and overlying Triassic Chitistone Limestone. One to three feet of shale separates the greenstone from the limestone. The deposits are mostly disseminated powdery malachite in the shale and in the upper 3 to 5 feet of greenstone (Miller, 1946). Some malachite coats fractures in the limestone and a small amount of chalcocite and bornite in limestone was found at one of the portals to the underground workings. The mine was developed by 2 inclines, 3 short adits, and 400 to 500 feet of drifts (Miller, 1946). Only small amounts of ore were produced. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

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

23

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

The mine was developed by 2 inclines, 3 short adits, and 400 to 500 feet of drifts (Miller, 1946). Only small amounts of ore were produced.

Production notes:

Only small amounts of ore were produced.

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Miller, 1946; MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of Hidden Creek Lake)

Site type: Prospect

ARDF no.: MC079

Latitude: 61.5554 **Quadrangle:** MC C-6

Longitude: 143.0922

Location description and accuracy:

This prospect is on the valley wall south of Hidden Creek Lake. It is at an elevation of about 4,000 feet, 1,200 feet south of Hidden Creek Lake and 2,000 feet north of the center of section 5, T. 4 S., R. 13 E. of the Copper River Meridian. This is National Park Service locality WRST-164 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a copper prospect where 12 claims were once staked. The prospect is near the contact between Triassic Nikolai Greenstone and overlying Triassic Chitistone Limestone (MacKevett, 1972). The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu? (Cox and Singer, 1986; model 23) and/or Kennecott-type copper deposit (after MacKevett and others, 1997)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Gorilla

Site type: Prospect

ARDF no.: MC080

Latitude: 61.5489 **Quadrangle:** MC C-6

Longitude: 142.8787

Location description and accuracy:

This prospect is on the north side of a small cirque valley on the east valley wall of Root Glacier. It is at an elevation of about 4,900 feet, 1,200 feet southeast of elevation 5720 and 4,000 feet east of Root Glacier. The site is in the SE1/4 of section 4, T. 4 S., R. 14 E. of the Copper River Meridian. This is locality 94 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite(?)

Gangue minerals:

Geologic description:

This prospect is an area of iron- and copper-staining on fractures in Upper Triassic Nizina Limestone (MacKevett, 1972; 1976). It was explored by small and shallow workings. Larger copper deposits in the area (e.g., MC083, MC090, MC091, and MC093) are localized stratigraphically below the Nizina in the lower part of the Chitistone Limestone. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-

bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23) and/or Kennecott-type copper deposit (after MacKevett and others, 1997)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect was explored by small and shallow workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (southeast of Donoho Peak)

Site type: Prospect

ARDF no.: MC081

Latitude: 61.5483 **Quadrangle:** MC C-6

Longitude: 142.9585

Location description and accuracy:

This prospect is on the south end of the ridge between Root and Kennicott Glaciers. It is at an elevation of about 5,100 feet, 4,600 feet southeast of Donoho Peak (elevation 6696) and 3,300 feet west of Root Glacier. This is locality 96 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of chalcocite- and bornite-bearing veins to 6 inches wide that cut Triassic Nikolai Greenstone near the contact with overlying Triassic Chitistone Limestone (MacKevett, 1976). The prospect was explored by shallow surface workings. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored by shallow surface workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west of lower Kennicott Glacier)

Site type: Occurrence

ARDF no.: MC082

Latitude: 61.5446 **Quadrangle:** MC C-6

Longitude: 143.0815

Location description and accuracy:

This occurrence is on the west valley wall of lower Kennicott Glacier. It is at an elevation of about 4,600 feet, 3,000 feet southeast of the center of section 5, T. 4 S., R 13 E. of the Copper River Meridian. This is locality 95 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, malachite

Gangue minerals:

Geologic description:

This occurrence consists of a small malachite-coated pod of chalcocite in Triassic Nikolai Greenstone (MacKevett, 1976). The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Erie

Site type: Mine

ARDF no.: MC083

Latitude: 61.5414 **Quadrangle:** MC C-6

Longitude: 142.8903

Location description and accuracy:

The Erie mine is on the east valley wall of lower Root Glacier (MacKevett, 1972). It is at an elevation of about 4,600 feet, 2,500 feet east of Root Glacier and 2,600 feet south-southwest of elevation 5720. The mine is in the NW1/4 of section 9, T. 4 S., R. 14 E. of the Copper River Meridian. This is locality 93 of MacKevett (1976), and Cobb and MacKevett (1980) included it under the name 'Kennecott Copper Corp.'. The mine is shown on the McCarthy C-6 quadrangle (1993 edition).

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Anilite, antlerite, azurite, bornite, chalcanthite, chalcocite, chalcopyrite, copper arsenates, covellite, digenite, djurleite, enargite, galena, idaite, luzonite, malachite, orpiment, pyrite, sphalerite, tennantite

Gangue minerals: Calcite, dolomite

Geologic description:

The Erie, Mother Lode (MC090), Jumbo (MC091), and Bonanza (MC093) mines, all on the ridge between McCarthy Creek and Kennicott and Root glaciers, produced significant amounts of high-grade copper ore when they were operated by Kennecott Copper Corporation between 1911 and 1938. These mines developed several different orebodies but their underground workings were interconnected. Together they produced 4 million metric tons of ore with a grade of 13 percent copper. The estimated 536,000 tons of copper recovered was accompanied by the recovery of about 100 tons of silver (MacKevett and others, 1997). No other metals were of economic importance in these orebodies.

Bateman and McLaughlin (1920) and Lasky (1929) provide important descriptions of the geology, mineralogy, and structure of these deposits. Cobb and MacKevett (1980) refer to the many Federal government publications, dating from the time of the Bonanza discovery in 1900, that contain information about them. MacKevett and others (1997) provide an excellent synthesis and interpretation of the structure, stratigraphy, economic geology, and geochemistry of these deposits. This record largely summarizes information

provided by MacKevett and others (1997).

The Erie mine produced 52,000 tons of ore containing 15.04 percent copper. The ore was worked from several levels between elevations of 990 and 1,370 meters. A long crosscut connects the Erie mine workings with those at the Jumbo mine (MC091). Production was from the main Erie vein, the 616 vein, and a few smaller veins.

The Erie and other nearby orebodies are localized in the lower part of the Upper Triassic Chitistone Limestone. The base of the mineralization was usually about 27 to 37 meters stratigraphically above the contact of the Chitistone Limestone with the underlying Upper Triassic Nikolai Greenstone. The development of intertidal carbonate facies with stromatolites, bacterial mats, gypsum, and anhydrite in the lower Chitistone Limestone is one important control on the development and location of the orebodies.

Steep, northeast-trending fissures up to 300 meters long are another important control on the location of the major orebodies. These fissures show minor displacement of bedding in the Chitistone Limestone and localize breccia and trangressive dolomite alteration. The breccia zones, thought by MacKevett and others (1997) to be early collapse breccia along solution-enlarged fissures, laterally envelop the orebodies and extend stratigraphically upward above them. The lower Chitistone Limestone is locally highly faulted and shattered at the Erie mine.

The main Erie vein averages about 15 meters in height and is up to 3 meters wide. The orebody strikes about N 20-40 E, dips steeply southeast, and plunges northeastward, essentially parallel to stratigraphic dip in the host Chitistone Limestone. The vein becomes thinner and leaner to the northeast where it merges into a barren, brecciated, calcite-rich zone. The Erie vein bottoms on a bedding-plane fault about 30 meters above Nikolai Greenstone. The 616 vein strikes N 40 E, dips 50 to 60 SE, and is intermittently mineralized over a length of about 100 meters. It is up to 3.5 meters wide at its base against a bedding-plane fault. The few other small, northeast-striking veins that yielded some production were 30 to 90 meters in length.

Typically the large high-grade copper deposits of the area, like the Erie vein, contain many minerals in the Cu2S-CuS system. Chalcocite and djurleite are abundant with minor amounts of covellite, bornite, chalcopyrite, digenite, anilite, luzonite, idaite, malachite, azurite, chalcanthite, and orpiment. Other minerals reported by Bateman and McLaughlin (1920) in minor or trace amounts, include tennantite, antlerite, sphalerite, galena, pyrite, and copper arsenates. Enargite reported by Bateman and McLaughlin was not identified by MacKevett and others (1997).

Although the Chitistone Limestone-hosted, copper-rich ores are mostly chalcocite and djurleite, remnant clots of earlier minerals allow a definition of the mineral paragenesis. Early pyrite, now found only in traces, was replaced by chalcopyrite, which in turn was replaced by bornite and minor covellite. Temperatures of sulfide deposition fell during these stages from near 200 to 150 degrees centigrade. The main-stage ore minerals, chalcocite and djurleite, made up 95 percent of the ore and were deposited at temperatures of 90 +/- 10 degrees centigrade. Later, oxidized ore fluids overwhelmed reductants in the host rock and chalcocite was partly replaced by anilite and covellite and finally by malachite and azurite.

The common alteration at the Jumbo and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and

extend vertically above them. The replacement dolomite is coarser and lighter gray than the original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997).

The mineralogy and geochemistry of the high-grade copper deposits combined with fluid inclusion and stable isotope data, indicate that the high-grade copper ores were deposited by reactions between oxidized copper-rich brines which moved through Nikolai Greenstone and sulfur-rich fluids derived from the thermal reduction of gypsum in the presence of organic matter in the lower part of the Chitistone Limestone. The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

The common alteration at the Erie and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and extend vertically above them. The replacement dolomite is coarser and lighter gray than the original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997). Oxidation of deposits is not related to the present land surface and practically the entire deposit has been partially oxidized, even in the deepest levels of mine.

Age of mineralization:

Cretaceous? The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:

Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

The ore was worked from several levels between elevations of 990 and 1,370 meters. A long crosscut connects the Erie mine workings with those at the Jumbo mine (MC091).

Production notes:

The Erie mine produced 52,000 tons of ore containing 15.04 percent copper. Production was from the main Erie vein, 616 vein, and a few smaller veins.

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Bateman and McLaughlin, 1920; Lasky, 1929; MacKevett, 1976; Cobb and MacKevett, 1980; Silberman and others, 1980; Armstrong and MacKevett, 1982; MacKevett and others, 1997.

Primary reference: MacKevett and others, 1997

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Nebraska

Site type: Prospect

ARDF no.: MC084

Latitude: 61.5402 **Quadrangle:** MC C-6

Longitude: 143.1685

Location description and accuracy:

This prospect is in the valley of Glacier Gulch, a south tributary to Hidden Creek. It is at an elevation of about 4,300 feet, 4,000 feet south-southeast of elevation 6610 and 3,300 feet northeast of the center of section 11, T. 4 S., R. 12 E. of the Copper River Meridian. This is locality 100 of MacKevett (1976). It is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, malachite

Gangue minerals:

Geologic description:

This prospect consists of veins and fracture coatings of malachite and rare bornite in fractured Triassic Nikolai Greenstone (Moffit and Maddren, 1909; MacKevett, 1976). The prospect was explored by a short adit and surface pits and trenches. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored by a short adit and surface pits and trenches.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Maddren, 1909; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Rex Bench

Site type: Mine

ARDF no.: MC085

Latitude: 61.5241 **Quadrangle:** MC C-6

Longitude: 143.2425

Location description and accuracy:
An unpublished National Park Service map locates this mine on an unnamed east tributary to Fohlin Creek. The site is at an elevation of about 2,800 feet, 6,800 feet southwest of elevation 6110 and 500 feet north of the center of section 15, T. 4 S., R. 12 E. of the Copper River Meridian. This is National Park Service locality WRST-166.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold mine. Bedrock in the area is mostly Mesozoic sedimentary rocks (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Apparently at least some workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Fourth of July Creek; Woodin and Herman

Site type: Prospect

ARDF no.: MC086

Latitude: 61.5238 **Quadrangle:** MC C-6

Longitude: 143.1536

Location description and accuracy:

This prospect is at the head of Fourth of July Creek (MacKevett, 1972). It is at an elevation of about 5,400 feet, 3,300 feet north of elevation 6012, and 1,000 feet north-northwest of the center of section 13, T. 4 S., R. 12 E. of the Copper River Meridian. This is locality 99 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyrite, malachite

Gangue minerals:

Geologic description:

This deposit consists of malachite along fractures and thin seams of chalcopyrite and bornite at the contact of amygdaloidal and more massive rock in highly fractured Triassic Nikolai Greenstone (Moffit and Maddren, 1909; MacKevett, 1976). A short adit and surface pits explored this prospect. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma

(Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
A short adit and numerous surface workings explored this prospect.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Maddren, 1909; MacKevett, 1972; MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (confluence of Kennicott and Root Glaciers)

Site type: Prospect

ARDF no.: MC087

Latitude: 61.5187 **Quadrangle:** MC C-6

Longitude: 142.9520

Location description and accuracy:

An unpublished National Park Service map shows mining claims along the edges of Kennicott and Root Glaciers near their junction south of Donoho Peak. This prospect site is approximately located at confluence of these glaciers in the SW1/4 of section 18, T. 4 S., R. 14 E. of the Copper River Meridian. This is National Park Service locality WRST-174.

Commodities:

Main:

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map shows mining claims along the edges of Kennicott and Root Glaciers near their confluence south of Donoho Peak. This is National Park Service locality WRST-174 but the information provided in the unpublished National Park Service database for this locality is for the Regal mine (MC078). The site for this record is assumed to be to be a valid mineral location but no other information is available.

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: Undetermined.

Site Status: Undetermined

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (near head of Fourth of July Creek)

Site type: Prospect

ARDF no.: MC088

Latitude: 61.5108 **Quadrangle:** MC C-6

Longitude: 143.1380

Location description and accuracy:

This prospect is near the head of Fourth of July Creek. The prospect is approximately located at an elevation of about 4,900 feet, 3,500 feet southeast of elevation 6012 and 2,500 feet northeast of the center of section 24, T. 4 S., R. 12 E. of the Copper River Meridian. This location is just inside the boundary of the Chistochina district. This is National Park Service locality WRST-168 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Co

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a cobalt-vein prospect. Bedrock in the area is Triassic or Early Jurassic(?) sedimentary rocks of the McCarthy Formation that are locally cut by Tertiary hypabyssal felsic intrusions (MacKevett, 1972).

Alteration:

Age of mineralization:

Jurassic or younger based on the age of the rocks in the area.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1972.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Spokane placer; Kennecott Group

Site type: Prospects

ARDF no.: MC089

Latitude: 61.5474 **Quadrangle:** MC C-5

Longitude: 142.7870

Location description and accuracy:
These prospects are on McCarthy Creek at and above the mouth of Lubbe Creek. They are in the SE1/4 of section 1, T. 4 S., R. 14 E. of the Copper River Meridian. This is National Park Service localities WRST-177 and WRST-178. The latitude and longitude for this record are for locality WRST-177 and were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify these localities as placer gold prospects. Bedrock in the immediate area of the prospects is Triassic limestone, but Triassic and Jurassic(?) siliciclastic sedimentary rocks make up most of the bedrock at the head of McCarthy Creek (MacKevett, 1970 [GQ 844]).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1970 (GQ 844).

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Mother Lode

Site type: Mine

ARDF no.: MC090

Latitude: 61.5229 **Quadrangle:** MC C-5

Longitude: 142.8511

Location description and accuracy:

The Mother Lode mine is at the head of a small cirque valley on the west valley wall of McCarthy Creek (MacKevett, 1970 [GQ 899]). It is at an elevation of about 5,300 feet, 2,600 feet east of Bonanza Peak (elevation 6983) and about 300 feet east of the center of section 14, T. 4 S., R. 14 E. of the Copper River Meridian. This is locality 91 of MacKevett (1976); Cobb and MacKevett (1980) included this mine under the name 'Kennecott Copper Corp.'. The Mother Lode mine is shown on the McCarthy C-5 quadrangle (1993 edition).

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Anilite, antlerite, azurite, bornite, chalcanthite, chalcocite, chalcopyrite, copper arsenates, covellite, digenite, djurleite, enargite, galena, idaite, luzonite, malachite, orpiment, pyrite, sphalerite, tennantite

Gangue minerals: Calcite, dolomite

Geologic description:

The Mother Lode, Bonanza (MC093), Jumbo (MC091), and Erie (MC083) mines, all on the ridge between McCarthy Creek and Kennicott and Root Glaciers, produced significant amounts of high-grade copper ore when they were operated by Kennecott Copper Corporation between 1911 and 1938. These mines developed several different orebodies but their underground workings were interconnected. Together they produced 4 million metric tons of ore with a grade of 13 percent copper. The estimated 536,000 tons of copper recovered was accompanied by the recovery of about 100 tons of silver (MacKevett and others, 1997). No other metals were of economic importance in these orebodies.

Bateman and McLaughlin (1920) and Lasky (1929) provide important descriptions of the geology, mineralogy, and structure of these deposits. Cobb and MacKevett (1980) refer to the many Federal government publications, dating from the time of the Bonanza discovery in 1900, that contain information about them. MacKevett and others (1997) provide an excellent synthesis and interpretation of the structure, stratigraphy, economic

geology, and geochemistry of these deposits. This record largely summarizes information provided by MacKevett and others (1997).

The Mother Lode mine produced 1,216,000 tons of ore containing 12.39 percent copper. The largest orebody is the Mother Lode vein, which produced 507,000 tons of ore containing 12.05 percent copper. This ore was accessed from both the Mother Lode and Bonanza mines, which developed 12 levels between surface exposures at about 1,800 meters elevation on the Bonanza vein (MC093) to depths at elevations of about 1,450 meters.

The Mother Lode vein and other nearby orebodies are localized in the lower part of the Upper Triassic Chitistone Limestone. The base of the mineralization is usually about 27 to 37 meters stratigraphically above the contact of the Chitistone Limestone with the underlying Upper Triassic Nikolai Greenstone. The development of intertidal carbonate facies with stromatolites, bacterial mats, gypsum, and anhydrite in the lower Chitistone Limestone is one important control on the development and location of the orebodies.

Steep, northeast-trending fissures up to 300 meters long are another important control on the location of the major orebodies. These fissures show minor displacement of bedding in the Chitistone Limestone and localize breccia and trangressive dolomite alteration. The breccia zones, thought by MacKevett and others (1997) to be early collapse breccia along solution-enlarged fissures, laterally envelop the orebodies and extend stratigraphically upward above them.

The Mother Lode vein orebody is about 1000 meters long, up to 8 meters wide at its base, and 90 meters high. It strikes 34-40 E and dips steeply to the southeast. The width decreases upwards from a sharp base on a bedding-plane fault near a stromatolite layer 30 meters stratigraphically above the Nikolai Greenstone. The orebody has many similarities to the nearby Bonanza vein (MC093), including becoming larger and richer in its lowermost, southwestern parts. The orebody is bordered by copper-bearing disseminations and veinlets except at its base. Some higher grade parts are associated with reddish sandy limestone, breccia, and gouge, suggesting ore deposition within a chimney or similar cavern.

The Marvelous fissure was also developed at the Mother Lode mine. It is a small orebody but it occurs stratigraphically higher than other deposits in the area. It is localized in the upper member of the Chitistone Limestone and is intermittently mineralized over a strike length of 335 meters and a height of about 100 meters. It strikes about N-35 E and dips between 70 NW and 70 SE.

Typically , the large high-grade copper deposits of the area, like the Mother Lode vein, contain many minerals in the Cu2S-CuS system. Chalcocite and djurleite are abundant, with minor amounts of covellite, bornite, chalcopyrite, digenite, anilite, luzonite, idaite, malachite, azurite, chalcanthite, and orpiment. Other minerals reported by Bateman and McLaughlin (1920) in minor or trace amounts include tennantite, antlerite, sphalerite, galena, pyrite, and copper arsenates. Enargite reported by Bateman and McLaughlin was not identified by MacKevett and others (1997).

Although the Chitistone Limestone-hosted, copper-rich ores are mostly chalcocite and djurleite, remnant clots of earlier minerals allow the determination of the mineral paragenesis. Early pyrite, now found only in traces, was replaced by chalcopyrite, which in turn was replaced by bornite and minor covellite. Temperatures of sulfide deposition fell during these stages from near 200 to 150 degrees centigrade. The main-stage ore miner-

als, chalcocite and djurleite, made up 95 percent of the ore and were deposited at temperatures of 90 +/- 10 degrees centigrade. Later, oxidized ore fluids overwhelmed reductants in the host rock and chalcocite was partly replaced by anilite and covellite and finally by malachite and azurite.

The common alteration at the Mother Lode and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and extend vertically above them. The replacement dolomite is coarser and lighter gray than the original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997).

The mineralogy and geochemistry of the high-grade copper deposits combined with fluid inclusion and stable isotope data indicate that the high-grade copper ores were deposited by reactions between oxidized copper-rich brines which moved through Nikolai Greenstone and sulfur-rich fluids derived from the thermal reduction of gypsum in the presence of organic matter in the lower part of the Chitistone Limestone. The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

The common alteration at the Mother Lode and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and extend vertically above them. The replacement dolomite is coarser and lighter gray than the original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997). Oxidation of deposits is not related to the present land surface and practically the entire deposit has been partially oxidized, even in the deepest levels of mine.

Age of mineralization:

Cretaceous? The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:

Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: Yes; large

Site Status: Inactive

Workings/exploration:

The ore was accessed from both the Mother Lode and Bonanza mines, which developed 12 levels between surface exposures at about 1,800 meters elevation on the Bonanza vein (MC093) to depths at elevations of about 1,450 meters.

Production notes:

The Mother Lode mine produced 1,216,000 tons of ore containing 12.39 percent copper. The largest orebody is the Mother Lode vein, which produced 507,000 tons of ore containing 12.05 percent copper.

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Bateman and McLaughlin, 1920; Lasky, 1929; MacKevett, 1970 (GQ 899); MacKevett, 1976; Cobb and MacKevett, 1980; Silberman and others, 1980; Armstrong and MacKevett, 1982; MacKevett and others, 1997.

Primary reference: MacKevett and others, 1997

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Jumbo

Site type: Mine

ARDF no.: MC091

Latitude: 61.5221 **Quadrangle:** MC C-5

Longitude: 142.8214

Location description and accuracy:

The Jumbo mine is in the cirque at the head of Jumbo Creek (MacKevett, 1970 [GQ 899]). It is at an elevation of about 5,800 feet, 3,000 feet west-northwest of Bonanza Peak (elevation 6983), and 3,400 feet northeast of elevation 5467. The mine is shown on the McCarthy C-5 quadrangle (1993 edition) in about the center of the N1/2 of section 15, T. 4 S., R. 14 E. of the Copper River Meridian. This is locality 92 of MacKevett (1976) and it is included by Cobb and MacKevett (1980) under the name 'Kennecott Copper Corp.'.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Anilite, antlerite, azurite, bornite, chalcanthite, chalcocite, chalcopyrite, copper arsenates, covellite, digenite, djurleite, enargite, galena, idaite, luzonite, malachite, orpiment, pyrite, sphalerite, tennantite

Gangue minerals: Calcite, dolomite

Geologic description:

The Jumbo, Erie (MC083), Mother Lode (MC090), and Bonanza (MC093) mines, all on the ridge between McCarthy Creek and Kennicott and Root Glaciers, produced significant amounts of high-grade copper ore when they were operated by Kennecott Copper Corporation between 1911 and 1938. These mines developed several different orebodies but their underground workings were interconnected. Together they produced 4 million metric tons of ore with a grade of 13 percent copper. The estimated 536,000 tons of copper recovered was accompanied by the recovery of about 100 tons of silver (MacKevett and others, 1997). No other metals were of economic importance in these orebodies.

Bateman and McLaughlin (1920) and Lasky (1929) provide important descriptions of the geology, mineralogy, and structure of these deposits. Cobb and MacKevett (1980) refer to the many Federal government publications, dating from the time of the Bonanza discovery in 1900, that contain information about them. MacKevett and others (1997) provide an excellent synthesis and interpretation of the structure, stratigraphy, economic

geology, and geochemistry of these deposits. This record largely summarizes information provided by MacKevett and others (1997).

The Jumbo mine produced 1,366,600 tons of ore containing 14.28 percent copper. The largest orebody, the Jumbo vein, produced 507,000 tons of ore containing 12.05 percent copper. The ore was worked from 20 levels between elevations of 1,036 and 1,755 meters.

The Jumbo and other nearby orebodies are localized in the lower part of the Upper Triassic Chitistone Limestone. The base of the mineralization was usually about 15 to 45 meters stratigraphically above the contact of the Chitistone Limestone with the underlying Upper Triassic Nikolai Greenstone. The development of intertidal carbonate facies with stromatolites, bacterial mats, gypsum, and anhydrite in the lower Chitistone Limestone is one important control on the development and location of the orebodies.

Steep, northeast-trending fissures up to 300 meters long are another important control on the location of the major orebodies. These fissures show minor displacement of bedding in the Chitistone Limestone and localize breccia and trangressive dolomite alteration. The breccia zones, thought by MacKevett and others (1997) to be early collapse breccia along solution-enlarged fissures, laterally envelop the orebodies and extend stratigraphically upward above them.

The main Jumbo vein averaged about 110 meters in height, was between 0.6 and 18 meters in width, and can be followed along its northeastward-plunging base for more than 450 meters (Bateman and McLaughlin, 1920). The orebodies strike about N 40-60 E and dip near vertical. The massive ore near the base of the Jumbo vein was exceptionally high-grade. The orebody is bordered by copper-bearing disseminations and veinlets except at its base. The highest grade zone peripheral to the Jumbo vein contained 0.5 to 2.5 percent copper over a length 40 meters. Several splays to the Jumbo vein, subparallel veins, bedding-parallel veins to 0.3 meters thick, and small masses measuring about 10 by 15 meters in plan and 15 meters high had minor production.

Typically the large high-grade copper deposits of the area, like the Mother Lode vein, contain many minerals in the Cu2S-CuS system. Chalcocite and djurleite are abundant along with minor amounts of covellite, bornite, chalcopyrite, digenite, anilite, luzonite, idaite, malachite, azurite, chalcanthite, and orpiment. Other minerals reported by Bateman and McLaughlin (1920) in minor or trace amounts, include tennantite, antlerite, sphalerite, galena, pyrite, and copper arsenates. Enargite reported by Bateman and McLaughlin was not identified by MacKevett and others (1997).

Although the Chitistone Limestone-hosted, copper-rich ores are mostly chalcocite and djurleite, remnant clots of earlier minerals allow the determination of the mineral paragenesis. Early pyrite, now found only in traces, was replaced by chalcopyrite, which in turn was replaced by bornite and minor covellite. Temperatures of sulfide deposition fell during these stages from near 200 to 150 degrees centigrade. The main-stage ore minerals, chalcocite and djurleite, made up 95 percent of the ore and were deposited at temperatures of 90 +/- 10 degrees centigrade. Later, oxidized ore fluids overwhelmed reductants in the host rock and chalcocite was partly replaced by anilite and covellite and finally by malachite and azurite.

The common alteration at the Jumbo and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and

extend vertically above them. The replacement dolomite is coarser and lighter gray than the original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997). Some Jumbo breccias contain ore minerals cementing limestone and dolomite, but calcite cement is common. A few breccias contain stratified, generally reddish, sandy, limy material.

The mineralogy and geochemistry of the high-grade copper deposits combined with fluid inclusion and stable isotope data, indicate that the high-grade copper ores were deposited by reactions between oxidized copper-rich brines which moved through Nikolai Greenstone and sulfur-rich fluids derived from the thermal reduction of gypsum in the presence of organic matter in the lower part of the Chitistone Limestone. The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

The common alteration at the Jumbo and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and extend vertically above them. The replacement dolomite is coarser and lighter gray than the original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997). Some Jumbo breccias contain ore minerals cementing limestone and dolomite, but calcite cement is common. A few breccias contain stratified, generally reddish, sandy, limy material. Oxidation of deposits is not related to the present land surface and practically the entire deposit has been partially oxidized, even in the deepest levels of mine.

Age of mineralization:

Cretaceous? The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:

Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: Yes; large

Site Status: Inactive

Workings/exploration:

The ore was worked from 20 levels between elevations of 1,036 and 1,755 meters. The underground workings at the Jumbo mine are interconnected with those at the Erie

(MC083), Mother Lode (MC090), and Bonanza (MC093) mines.

Production notes:

The Jumbo mine produced 1,366,600 tons of ore containing 14.28 percent copper. The largest orebody, the Jumbo vein, produced 507,000 tons of ore containing 12.05 percent copper.

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Bateman and McLaughlin, 1920; Lasky, 1929; MacKevett, 1970 (GQ 899); MacKevett, 1976; Cobb and MacKevett, 1980; Silberman and others, 1980; Armstrong and MacKevett, 1982; MacKevett and others, 1997.

Primary reference: MacKevett and others, 1997

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Independence

Site type: Prospect

ARDF no.: MC092

Latitude: 61.5152 **Quadrangle:** MC C-5

Longitude: 142.8196

Location description and accuracy:

This prospect is on the west valley wall of McCarthy Creek. It is at an elevation of about 5,200 feet, 2,700 feet north-northeast of elevation 6184, and about 200 feet north of the south boundary of section 14, T. 4 S., R. 14 E. of the Copper River Meridian. This is locality 90 of MacKevett (1976); the location is accurate to within about 100 feet. Cobb and MacKevett (1980) included this prospect under the name 'Kennecott (Copper Corp.)'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

This prospect consists of sheeted calcite veins containing chalcocite that are localized in a shear zone cutting Triassic Nikolai Greenstone (Moffit and Capps, 1911, p. 92; MacKevett, 1976). The shear zone with the calcite veins strikes N 38 E and intersects quartz-epidote veins with some bornite that strike N 78 E. The calcite veins continue upward into Triassic Chitistone Limestone but, the chalcocite is restricted to the part of the veins in the Nikolai Greenstone. The deposits were probably explored by at least pits and open cuts. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23) and/or Kennecott-type copper deposit (after MacKevett and others, 1997)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were probably explored by at least pits and open cuts.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Capps, 1911; MacKevett, 1970 (GQ 844); MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Moffit and Capps, 1911

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Bonanza

Site type: Mine

ARDF no.: MC093

Latitude: 61.5150 **Quadrangle:** MC C-5

Longitude: 142.8367

Location description and accuracy:

The Bonanza mine is on the ridge between McCarthy Creek and lower Kennicott Glacier (MacKevett, 1970 [GQ 899]). It is at an elevation of about 5,950 feet, 3,000 feet north-northwest of elevation 6184, and 2,500 feet south of Bonaza Peak (elevation 6983). The mine is in the northwest corner of section 23, T. 4 S., R. 14 E. of the Copper River Meridian and its location is shown on the McCarthy C-5 quadrangle (1993 edition). This is locality 89 of MacKevett (1976), and Cobb and MacKevett (1980) included it under the name 'Kennecott Copper Corp.'. This site is often described with the Mother Lode (MC090), Jumbo (MC091), and Erie (MC083) mines; some of the above MRDS numbers may be for these other mines.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Anilite, antlerite, azurite, bornite, chalcanthite, chalcocite, chalcopyrite, copper arsenates, covellite, digenite, djurleite, enargite, galena, idaite, luzonite, malachite, orpiment, pyrite, sphalerite, tennantite

Gangue minerals: Calcite, dolomite

Geologic description:

The Bonanza, Erie (MC083), Mother Lode (MC090), and Jumbo (MC091) mines, all on the ridge between McCarthy Creek and Kennicott and Root Glaciers, produced significant amounts of high-grade copper ore when they were operated by Kennecott Copper Corporation between 1911 and 1938. These mines developed several different orebodies but their underground workings were interconnected. Together they produced 4 million metric tons of ore with a grade of 13 percent copper. The estimated 536,000 tons of copper that was recovered was accompanied by about 100 tons of silver (MacKevett and others, 1997). No other metals were of economic importance in these orebodies.

Bateman and McLaughlin (1920) and Lasky (1929) provide important descriptions of the geology, mineralogy, and structure of these deposits. Cobb and MacKevett (1980) refer to the many Federal government publications, dating from the time of the Bonanza

discovery in 1900, that contain information about them. MacKevett and others (1997) provide an excellent synthesis and interpretation of the structure, stratigraphy, economic geology, and geochemistry of these deposits. This record largely summarizes information provided by MacKevett and others (1997).

The Bonanza mine produced 1,383,000 tons of ore containing 12.79 percent copper. The largest orebody in this mine, the Bonanza vein, produced 653,000 tons containing 13.44 percent copper. This ore was accessed from 12 levels between surface exposures at about 1,800 meters in elevation to a depth of about 1,450 meters in elevation.

The Bonanza vein and other nearby orebodies are localized in the lower part of the Upper Triassic Chitistone Limestone. The base of the mineralization was commonly 27 to 37 meters stratigraphically above the contact of the Chitistone Limestone with the underlying Upper Triassic Nikolai Greenstone. The development of intertidal carbonate-facies rocks with stromatolites, bacterial mats, gypsum, and anhydrite in the lower Chitistone Limestone is one important control on the development and location of the orebodies.

Steep, northeast-trending fissures up to 300 meters long are another important control on the location of the major orebodies. These fissures show minor displacement of bedding in the Chitistone Limestone and localize breccia and trangressive dolomite alteration. The breccia zones, thought by MacKevett and others (1997) to be early collapse breccia along solution-enlarged fissures, laterally envelop the orebodies and extend stratigraphically upward above them.

The Bonanza vein orebody is about 580 meters long, 0.5 to 15 meters wide at its base, and 50 to 60 meters high (Bateman and McLaughlin, 1920). It strikes N 45-60 E and dips 75 SE to vertical. The width decreases upwards from a sharp base on a bedding plane in the Chitistone Limestone about 30 meters stratigraphically above the Nikolai Greenstone. The orebody merges into narrow and weakly mineralized structures both laterally and upward. Other orebodies at the Bonanza mine include the narrow, 400 meter long and 60 meter high Birch vein that contains copper sulfide-bearing veinlets, pods, and disseminations. The Birch vein produced 125,000 tons of ore with 9.37 percent copper. The Flat orebody and other small deposits in the Bonanza mine are mineralized zones localized along bedding in the Chitistone Limestone.

Typically the large high-grade copper deposits of the area, like the Bonanza vein, contain many minerals in the Cu2S-CuS system. Chalcocite and djurleite are abundant, with minor amounts of covellite, bornite, chalcopyrite, digenite, anilite, luzonite, idaite, malachite, azurite, chalcanthite, and orpiment. Other minerals reported by Bateman and McLaughlin (1920) in minor or trace amounts include tennantite, antlerite, sphalerite, galena, pyrite, and copper arsenates. Enargite reported by Bateman and McLaughlin was not identified by MacKevett and others (1997).

Although the Chitistone Limestone-hosted, copper-rich ores are mostly chalcocite and djurleite, remnant clots of earlier minerals provide a definition of the mineral paragenesis. Early pyrite, now found only in traces, was replaced by chalcopyrite, which in turn was replaced by bornite and minor covellite. The temperature of sulfide deposition fell during these stages from near 200 to 150 degrees centigrade. The main-stage ore minerals, chalcocite and djurleite, made up 95 percent of the ore and were deposited at temperatures of 90 +/- 10 degrees centigrade. Later, oxidized ore fluids overwhelmed reductants in the host rock and chalcocite was partly replaced by anilite and covellite, and finally by malachite and azurite.

The common alteration at the Bonanza and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and extend vertically above them. The replacement dolomite is coarser and lighter gray than original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997).

The mineralogy and geochemistry of the high-grade copper deposits combined with fluid inclusion and stable isotope data indicate that the high-grade copper ores were deposited by reactions between oxidized copper-rich brines which moved through Nikolai Greenstone and sulfur-rich fluids derived from the thermal reduction of gypsum in the presence of organic matter in the lower part of the Chitistone Limestone. The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

The common alteration at the Bonanza and other Chitistone Limestone-hosted, high-grade copper deposits in the area is trangressive dolomitization. Dolomite replacement is approximately coincident with the breccia zones that laterally surround the orebodies and extend vertically above them. The replacement dolomite is coarser and lighter gray than the original dolostone and it lacks any evidence of bedding (Armstrong and MacKevett, 1982; MacKevett and others, 1997). Oxidation of deposits is not related to the present land surface and practically the entire deposit has been partially oxidized, even in the deepest levels of the mine.

Age of mineralization:

Cretaceous? The migration of the oxidized copper-rich brines to the site of deposition is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Related copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:

Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: Yes; large

Site Status: Inactive

Workings/exploration:

The ore produced from the Bonanza mine was mined from 12 levels between surface exposures at an elevation of about 1,800 meters to a depth of about 1,450 meters in eleva-

tion.

Production notes:

The Bonanza mine produced 1,383,000 tons of ore containing 12.79 percent copper. The largest orebody in this mine, the Bonanza vein, produced 653,000 tons that contained 13.44 percent copper. Some of the production was from natural surface accumulations.

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Bateman and McLaughlin, 1920; Lasky, 1929; MacKevett, 1970 (GQ 899); MacKevett, 1976; Cobb and MacKevett, 1980; Silberman and others, 1980; Armstrong and MacKevett, 1982; MacKevett and others, 1997.

Primary reference: MacKevett and others, 1997

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of lower Nizina Glacier)

Site type: Occurrence

ARDF no.: MC094

Latitude: 61.6372 **Quadrangle:** MC C-4

Longitude: 142.3481

Location description and accuracy:

This occurrence is on a ridge crest east of lower Nizina Glacier (MacKevett, 1970 [GQ-844]). It is 800 feet northeast of elevation 6928 (Foothill)in about the center of the W1/2 of section 4, T. 3 S., R. 17 E. of the Copper River Meridian. This is locality 113 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, chalcopyrite

Gangue minerals: Quartz

Geologic description:

This prospect consists of chalcopyrite- and azurite-bearing quartz veins up to 4 inches thick that cut dacite of the upper Tertiary Wrangell Lava (MacKevett, 1970, p. 8 [GQ 844]; 1976). Azurite-stained dacite is common in the immediate area.

Alteration:

Oxidation.

Age of mineralization:

The dacite host rock is late Tertiary in age.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1970 (GQ 844); MacKevett, 1976.

Primary reference: MacKevett, 1970 (GQ 844)

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of lower Nizina Glacier)

Site type: Occurrence

ARDF no.: MC095

Latitude: 61.6314 **Quadrangle:** MC C-4

Longitude: 142.4184

Location description and accuracy:

This occurrence is on the east valley wall of lower Nizina Glacier (MacKevett, 1970 [GQ 844]). It is at an elevation of about 2,800 feet, 800 feet southeast of hill 3018 in the southeast corner of section 1, T. 3 S., R. 16 E. of the Copper River Meridian. This is locality 114 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, malachite

Gangue minerals: Calcite, quartz

Geologic description:

This prospect consists of chalcocite- and malachite-bearing quartz-calcite veins as much as 8 inches thick that are localized along faults in Triassic Nikolai Greenstone (MacKevett, 1970 [GQ 844]). The veins can be traced for up to 50 feet. They occur near a major fault juxtaposing Nikolai Greenstone against Permian Hasen Creek Formation (MacKevett, 1970 [GQ 844]). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1970 (GQ 844); MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1970 (GQ 844)

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of lower Nizina Glacier)

Site type: Occurrence

ARDF no.: MC096

Latitude: 61.6221 **Quadrangle:** MC C-4

Longitude: 142.4207

Location description and accuracy:

This occurrence is in an unnamed drainage on the east valley wall of lower Nizina Glacier (MacKevett, 1970 [GQ 844]). It is at an elevation of about 2,500 feet, 1,500 feet north of elevation 2720, and 1,000 feet east of the center of section 12, T. 3 S., R. 16 E. of the Copper River Meridian. This is locality 114 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, malachite

Gangue minerals: Calcite, quartz

Geologic description:

This occurrence consists of chalcocite- and malachite-bearing quartz-calcite veins as much as 8 inches thick that are localized along faults in Triassic Nikolai Greenstone (MacKevett, 1970 [GQ 844]). The veins can be traced for up to 50 feet. They occur near a major fault juxtaposing Nikolai Greenstone against Cretaceous Moonshine Creek Formation (MacKevett, 1970 [GQ 844]). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1970 (GQ 844); MacKevett, 1976.

Primary reference: MacKevett, 1970 (GQ 844)

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (near Contact Gulch)

Site type: Occurrence

ARDF no.: MC097

Latitude: 61.5032 **Quadrangle:** MC C-4

Longitude: 142.3075

Location description and accuracy:

This occurrence is on a bluff east of lower Contact Gulch. It is at an elevation of about 4,900 feet, 1,500 feet south of the center of section 22, T. 4 S., R 17 E. of the Copper River Meridian. This is locality 84 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other: Ag, Mo

Ore minerals: Bornite

Gangue minerals:

Geologic description:

This occurrence consists of bornite-bearing veins to 6 centimeters thick that occur in a 2-meter-wide fault zone that cuts Triassic Nikolai Greenstone (MacKevett, 1976). A sample of the mineralization contained 200 parts per million (ppm) silver, more than 20,000 ppm copper, and 7 ppm molybdenum. The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Alteration:

Age of mineralization:

Cretaceous? The widespread deposition of copper in Triassic greenstone and limestone of the area is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic or Early Cretaceous (MacKevett and others, 1997). Copper-bearing minerals were deposited in the underlying Nikolai Greenstone at about 112 Ma (Silberman and others, 1980).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; Silberman and others, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of Middle Fork of the White River)

Site type: Prospect

ARDF no.: MC098

Latitude: 61.7278 **Quadrangle:** MC C-3

Longitude: 141.9079

Location description and accuracy:
This prospect is high on the south valley wall of the Middle Fork of the White River. It is at an elevation of about 6,000 feet, 4,400 feet north-northeast of elevation 8233 in the NE1/4 of section 2, T. 2 S., R. 19 E. of the Copper River Meridian. This is locality 156 of MacKevett (1976); the location may be accurate to within a thousand feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite(?), native copper(?)

Gangue minerals:

Geologic description:
This old copper prospect is in Triassic Nikolai Greenstone, but no other information about it is available (Capps, 1916, p. 122; MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:
Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Possibly some minor work.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Capps, 1916; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Skolai Mining Company

Site type: Prospect

ARDF no.: MC099

Latitude: 61.7160 **Quadrangle:** MC C-3

Longitude: 141.8395

Location description and accuracy:

This prospect is on the west valley wall of the upper White River. It is at an elevation of about 4,900 feet in a small drainage 2,500 feet south of elevation 6337, in the southwest corner of section 5, T. 2 S., R. 20 E. of the Copper River Meridian. This is locality 155 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite, malachite

Gangue minerals: Calcite

Geologic description:

At this prospect, thin malachite-, bornite-, and chalcocite-bearing veins occur along small faults cutting Triassic Nikolai Greenstone (Capps, 1916; MacKevett, 1976). Reticulating veins of calcite and malachite coat some fracture surfaces. Surface cuts to 18 feet long explored this deposit (Capps, 1916, p. 123). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface cuts to 18 feet long explored this deposit (Capps, 1916, p. 123).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Capps, 1916; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west of terminus of Russell Glacier)

Site type: Prospect

ARDF no.: MC100

Latitude: 61.6966 **Quadrangle:** MC C-3

Longitude: 141.8695

Location description and accuracy:
This prospect is on the ridge west of the terminus of Russell Glacier. It is close to elevation 6807, in the NW1/4 of section 18, T. 2 S., R. 20 E. of the Copper River Meridian. This is locality 153 of MacKevett (1976); the location is is accurate to within 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcocite

Gangue minerals:

Geologic description:
The deposit at this prospect consists of thin veins of bornite and chalcocite that cut Triassic Nikolai Greenstone (Moffit and Knopf, 1910, p. 57; MacKevett, 1976). The deposits were explored by small pits and trenches. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:
Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored with small pits and trenches.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Knopf, 1910; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: Moffit and Knopf, 1910

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of lower Russell Glacier)

Site type: Prospect

ARDF no.: MC101

Latitude: 61.6453 **Quadrangle:** MC C-3

Longitude: 141.7857

Location description and accuracy:
This prospect is east of lower Russell Glacier. It is at an elevation of about 5,000 feet, 6,000 feet northwest of elevation 7316, and 7,700 feet north-northeast of elevation 6510. The site is in the SE1/4 of section 33, T. 2 S., R. 20 E. of the Copper River Meridian. This is locality 151 of MacKevett (1976); the location is accurate to within 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, native copper

Gangue minerals: Calcite, prehnite

Geologic description:
This deposit consists of amygdule-fillings and veinlets of intergrown prehnite, calcite, chalcocite, and native copper in Triassic Nikolai Greenstone (Moffit and Knopf, 1910, p. 56; MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:
Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Knopf, 1910; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: Moffit and Knopf, 1910

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of White River)

Site type: Occurrence

ARDF no.: MC102

Latitude: 61.7072 **Quadrangle:** MC C-2

Longitude: 141.7439

Location description and accuracy:

This occurrence is low on the east valley wall of the White River. It is at an elevation of about 4,100 feet, 3,600 feet northwest of elevation 6368 (Bend) and about 2,700 feet west-southwest of the center of section 11, T. 2 S., R. 20 E., of the Copper River Meridian. This is locality 154 of MacKevett (1976); the location is accurate to within 1,000 feet.

Commodities:

Main: Ag, Co, Cu

Other: As, Zn

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence is associated with altered and weakly mineralized rocks along a 160-foot-wide fault zone near or in the Totshunda fault zone (MacKevett, 1976, 1978). In this area, the Totshunda fault juxtaposes Triassic Nikolai Greenstone to the north against upper Paleozoic volcanic and sedimentary rocks to the south (MacKevett, 1978). A sample of the altered rocks contained 3 parts per million (ppm) silver, 300 ppm arsenic, 200 ppm cobalt, 200 ppm copper, and 200 ppm zinc (MacKevett, 1976).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (on lower Sheep Creek)

Site type: Occurrence

ARDF no.: MC103

Latitude: 61.7026 **Quadrangle:** MC C-2

Longitude: 141.6507

Location description and accuracy:
This occurrence is on the east side of lower Sheep Creek, a south tributary to the White River. The occurrence is at an elevation of about 4,000 feet in the SW1/4 of section 8, T. 2 S., R. 21 E. of the Copper River Meridian. This is locality 150 of MacKevett (1976); the location is accurate to within 1,000 feet.

Commodities:

Main: Mo

Other:

Ore minerals: Molybdenite(?)

Gangue minerals:

Geologic description:
This occurrence consists of altered zones in Cretaceous granodiorite (MacKevett, 1976, 1978). A sample of the altered rock contained 50 parts per million molybdenum.

Alteration:

Age of mineralization:
Cretaceous or younger based on the age of the host rocks.

Deposit model:
Porphyry Mo, low F? (Cox and Singer, 1986; model 21b)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
21b?

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of White River)

Site type: Occurrence

ARDF no.: MC104

Latitude: 61.6809 **Quadrangle:** MC C-2

Longitude: 141.5651

Location description and accuracy:

This occurrence is in an unnamed south tributary to the White River. It is at an elevation of about 4,800 feet, 5,000 feet southwest of elevation 5405 (Black Eagle) near the center of the west boundary of section 23, T. 2 S., R. 21 E. of the Copper River Meridian. This is locality 149 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite(?)

Gangue minerals:

Geologic description:

This occurrence is in a 200-foot-thick altered mafic dike that cuts Triassic Nikolai Greenstone (MacKevett, 1976, 1978). A sample of the altered dike contained 1,500 parts per million copper.

Alteration:

Age of mineralization:

Late Triassic or younger based on the age of the volcanic host rock.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC105

Latitude: 61.6742 **Quadrangle:** MC C-2

Longitude: 141.6651

Location description and accuracy:

This prospect is at the head of Sheep Creek, a south tributary to the White River. It is at an elevation of about 5,900 feet, 4,000 feet northeast of elevation 6696, in the SE1/4 of section 19, T. 2 A., R. 21 E. of the Copper River Meridian. This is locality 148 of MacKevett (1976); the location is is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, cuprite, malachite, native copper

Gangue minerals: Calcite, zeolite(?)

Geologic description:

This deposit consists of native copper, chalcocite, cuprite, malachite, calcite, and zeolite (?) that fill amygdules in Triassic Nikolai Greenstone (Capps, 1916; MacKevett, 1976). The deposits were explored by an adit that was caved by 1916. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by an adit that was caved by 1916.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Capps, 1916; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: Capps, 1916

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north valley wall of Wiley Creek)

Site type: Prospect

ARDF no.: MC106

Latitude: 61.6741 **Quadrangle:** MC C-2

Longitude: 141.7336

Location description and accuracy:

This prospect is on the north valley wall of Wiley Creek, an east tributary to White River. The site is at an elevation of about 5,600 feet, 3,600 feet west-northwest of elevation 7554 and 1,200 feet south of the center of section 23, T. 2 S., R. 20 E. of the Copper River Meridian. This is locality 152 of MacKevett (1976); the location is approximate, perhaps within a few thousand feet.

Commodities:

Main: Cu

Other:

Ore minerals: Arsenopyrite, chalcocite(?)

Gangue minerals:

Geologic description:

The deposit at this prospect is in shale associated with altered and shattered amygdaloidal flow rock. The shale has sulfides that are mostly arsenopyrite but chalcocite veinlets have also been reported (Capps, 1916). The deposits are in upper Paleozoic sedimentary and volcanic rocks. The prospect has been explored by small open cuts (Capps, 1916; MacKevett, 1978).

Alteration:

Age of mineralization:

Late Paleozoic or younger based on the age of the host rocks.

Deposit model:

Veins?

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by small open cuts to 12 feet long (Capps, 1916).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Capps, 1916; MacKevett, 1976; MacKevett, 1978.

Primary reference: Capps, 1916

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of Russell Glacier)

Site type: Occurrence

ARDF no.: MC107

Latitude: 61.6299 **Quadrangle:** MC C-2

Longitude: 141.7233

Location description and accuracy:
This occurrence is on the east valley wall of an unnamed east tributary to Russell Glacier. It is at an elevation of about 5,500 feet, 2,500 feet southwest of elevation 6732 in the SE1/4 of section 2, T. 3 S., R. 20 E. of the Copper River Meridian. This is locality 112 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite(?)

Gangue minerals:

Geologic description:
This occurrence consists of secondary iron and copper minerals (malachite?) that coat fracture surfaces in Triassic Nikolai Greenstone (MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:
Oxidation.

Age of mineralization:
Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

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

23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of Mount Sulzer)

Site type: Occurrence

ARDF no.: MC108

Latitude: 61.6207 **Quadrangle:** MC C-2

Longitude: 141.5420

Location description and accuracy:

This occurrence is on the north valley wall at the west head of Giffin Glacier, about 2.2 miles east of Mount Sulzer. The site is at an elevation of about 7,400 feet, 1,500 feet east of the center of section 11, T. 3 S., R. 21 E. of the Copper River Meridian. This is locality 111A of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Chalcopyrite(?), gold(?)

Gangue minerals:

Geologic description:

This occurrence consists of copper-bearing veinlets and disseminations in volcaniclastic rocks of the upper Paleozoic Station Creek Formation (MacKevett, 1976). A sample of the mineralized rock contained 15 parts per million (ppm) silver, 0.9 ppm gold, and 10,000 ppm copper.

Alteration:

Age of mineralization:

Late Paleozoic or younger based on the age of the host rocks.

Deposit model:

Kuroko massive sulfide? (Cox and Singer, 1986; model 28a)

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

28a?

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of White River)

Site type: Prospect

ARDF no.: MC109

Latitude: 61.6216 **Quadrangle:** MC C-1

Longitude: 141.0123

Location description and accuracy:

This prospect is at an elevation of about 4,300 feet near the head of an unnamed south tributary to the White River. It is near the center of section 11, T. 3 S., R. 24 E. of the Copper River Meridian. This is National Park Service locality WRST-275. It is identified on an unpublished National Park Service map but the accompanying data are for a placer gold deposit in the McCarthy B-5 quadrangle. This site is assumed to be a valid mineral location although no other information is available.

Commodities:

Main:

Other:

Ore minerals:

Gangue minerals:

Geologic description:

This is National Park Service locality WRST-275. It is identified on an unpublished National Park Service map, but the accompanying data are for a placer gold deposit in the McCarthy B-5 quadrangle. The site for this record is assumed to be a valid mineral location, although no other information is available. Bedrock in the area is Permian sedimentary rocks and Triassic Nikolai Greenstone (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Kletson Creek

Site type: Prospect

ARDF no.: MC110

Latitude: 61.5872 **Quadrangle:** MC C-1

Longitude: 141.0078

Location description and accuracy:

This placer prospect is near the head of Kletson Creek which is mostly in Canada. The prospect is along the creek at an elevation of about 5,000 feet, 4,500 feet southeast of elevation 6626 (benchmark Dalton) in the SE1/4 of section 23. T. 3 S., R. 24 E. of the Copper River Meridian. This is locality 110 of MacKevett (1976); the location is accurate to within about 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Kletson Cr.'.

Commodities:

Main: Cu

Other:

Ore minerals: Native copper

Gangue minerals:

Geologic description:

A considerable length of Kletson Creek contains placer deposits of native copper (MacKevett, 1976). Bedrock at the head of Kletson Creek is Permian sedimentary rocks and Triassic Nikolai Greenstone (MacKevett, 1978).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

Alluvial placer with native copper

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Apparently only limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978; Cobb and MacKevett, 1980.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC111

Latitude: 61.5753 **Quadrangle:** MC C-1

Longitude: 141.0056

Location description and accuracy:
This occurrence is nearly on the east boundary of the McCarthy C-1 quadrangle. It is at an elevation of about 7,300 feet in the SE1/4 of section 26, T. 3 S., R. 24 E. of the Copper River Meridian. This is locality 109 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Native copper

Gangue minerals:

Geologic description:
This occurrence consists of native copper, varying from shot-pellet size to ramifying masses weighing a few pounds, that is disseminated in Triassic Nikolai Greenstone (MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:
Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (unnamed glacier west of Guerin Glacier)

Site type: Occurrence

ARDF no.: MC112

Latitude: 61.5614 **Quadrangle:** MC C-1

Longitude: 141.1171

Location description and accuracy:

This occurrence is on the west valley wall of an unnamed glacier about 3 miles west of Guerin Glacier, at the head of Cub Creek. The site is at an elevation of about 6,000 feet, 4,500 feet east of elevation 7745 in the SW1/4 of section 35, T. 3 S., R. 23 E. of the Copper River Meridian. This is locality 111 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other: Ag, As

Ore minerals: Malachite

Gangue minerals:

Geologic description:

This occurrence consists of a 10- by 100-foot area in Triassic sedimentary rocks that has veinlets of copper-bearing minerals, mostly malachite (MacKevett, 1976). A sample of the mineralization contained 100 parts per million (ppm) silver, 1,500 ppm arsenic, and more than 20,000 ppm copper. Copper mineralization is widespread in Triassic volcanic and sedimentary rocks of the McCarthy quadrangle. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is widespread in Triassic volcanic and sedimentary rocks of the McCarthy quadrangle. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC113

Latitude: 61.5287 **Quadrangle:** MC C-1

Longitude: 141.3275

Location description and accuracy:

This occurrence is near an arm of the Giffin Glacier. It is at an elevation of about 7,300 feet near the northeast corner of section 13, T. 4 S., R. 22 E. of the Copper River Meridian. This is locality 80 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, chalcocite, malachite, native copper

Gangue minerals:

Geologic description:

This occurrence consists of native copper, chalcocite, and alteration minerals (assumed to be malachite and azurite), that form veins and disseminations in a poorly exposed outcrop of Triassic Nikolai Greenstone (MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of the Gilahina River)

Site type: Prospect

ARDF no.: MC114

Latitude: 61.4595 **Quadrangle:** MC B-8

Longitude: 143.6533

Location description and accuracy:
This prospect is near an unnamed north tributary to the Gilahina River. It is at an elevation of about 3,600 feet, 2,500 feet west of elevation 4620 and 2,000 feet south of the center of section 5, T. 5 S., R. 10 E. of the Copper River Meridian. This is National Park Service locality WRST-170 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite(?)

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a copper prospect. Bedrock in the area is upper Paleozoic volcanic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:
Late Paleozoic or younger based on the age of the rocks in the area.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Escape

Site type: Prospect

ARDF no.: MC115

Latitude: 61.4513 **Quadrangle:** MC B-8

Longitude: 143.7888

Location description and accuracy:
This prospect is on the north side of Gilahina Butte. It is at an elevation of about 1,800 feet, 1,800 feet south of the McCarthy road in the NW1/4 of section 10, T. 5 S., R. 9 E. of the Copper River Meridian. This is National Park Service locality WRST-146 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcopyrite(?)

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a copper vein prospect. Bedrock in the area is Paleozoic crystalline rocks (MacKevett, 1978).

Alteration:

Age of mineralization:
Paleozic or younger based on the bedrock in the area.

Deposit model:
Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north shoulder of Nelson Mountain)

Site type: Occurrence

ARDF no.: MC116

Latitude: 61.3426 **Quadrangle:** MC B-8

Longitude: 143.8187

Location description and accuracy:
This occurrence is on the north shoulder of Nelson Mountain. It is at an elevation of about 3,300 feet, 500 feet south of elevation 3319 (benchmark O'Hara) near the northeast corner of section 20, T. 6 S., R. 9 E. of the Copper River Meridian. This is locality 60 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Pb, Zn

Other: Cd

Ore minerals: Pyrite(?), sphalerite(?)

Gangue minerals:

Geologic description:
This occurrence consists of sulfides scattered through Permian marble (MacKevett, 1976). A sample of the mineralized rock contained 15 percent iron, 300 parts per million cadmium, 700 ppm lead, and more than 10,000 ppm zinc.

Alteration:

Age of mineralization:
Permian or younger based on the age of the host rock.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): O'Hara

Site type: Prospect

ARDF no.: MC117

Latitude: 61.3338 **Quadrangle:** MC B-8

Longitude: 143.8415

Location description and accuracy:

This prospect is on the northwest flank of Nelson Mountain. It is at an elevation of about 4,500 feet, 3,500 feet northwest of elevation 5457 (Cho), and 4,800 feet southwest of elevation 3319 (O'Hara). The site is 1,500 feet west of the center of section 20, T. 6 S., R. 9 E. of the Copper River Meridian. This is locality 59 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Pb, Zn

Other: Cd?

Ore minerals: Galena, marcasite, pyrite, pyrrhotite, sphalerite

Gangue minerals: Tourmaline

Geologic description:

The deposit at this prospect consist of veins up to 8 inches thick that contain galena, sphalerite, pyrite, marcasite, and pyrrhotite. They cut Permian marble which locally also contains some disseminated tourmaline, pyrite, pyrrhotite, and sphalerite (Berg and Cobb, 1967, p. 64; MacKevett, 1976). The deposits were explored by 2 or 3 short adits driven about 1940.

Alteration:

Age of mineralization:

Permian or younger based on the age of the host rock.

Deposit model:

Vein and disseminated

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
The deposits were explored by two or three short adits driven about 1940.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Berg and Cobb, 1967; MacKevett, 1976.

Primary reference: Berg and Cobb, 1967

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Itchy

Site type: Prospect

ARDF no.: MC118

Latitude: 61.4937 **Quadrangle:** MC B-7

Longitude: 143.4578

Location description and accuracy:
This prospect is on an unnamed west headwater tributary to the Lakina River. It is near the center of section 29, T. 4 S., R. 11 E. of the Copper River Meridian. This is National Park Service locality WRST-159 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold prospect. Quaternary surficial deposits cover this area and bedrock is not exposed. Bedrock in nearby uplands is mostly Mesozoic sedimentary rocks locally intruded by Tertiary hypabyssal felsic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of the Gilahina River)

Site type: Occurrence

ARDF no.: MC119

Latitude: 61.4891 **Quadrangle:** MC B-7

Longitude: 143.6107

Location description and accuracy:
This occurrence is on a ridge north of the Gilahina River. It is at an elevation of about 6,150 feet, 800 feet south-southwest of elevation 6444 in the SW1/4 of section 28, T. 4 S., R. 10 E. of the Copper River Meridian. This is locality 103 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Pb

Other:

Ore minerals:

Gangue minerals:

Geologic description:
This occurrence consists of a 10-foot-wide iron-stained fault zone that cuts upper Paleozoic volcanic rocks (MacKevett, 1976, 1978). A sample of the altered material contained 7 parts per million (ppm) silver and 200 ppm lead.

Alteration:
Oxidation.

Age of mineralization:
Late Paleozoic or younger based on the age of the rocks adjacent to the fault that hosts the deposit.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of the Gilahina River)

Site type: Occurrence

ARDF no.: MC120

Latitude: 61.4824 **Quadrangle:** MC B-7

Longitude: 143.5927

Location description and accuracy:
This occurrence is at the head of an unnamed north tributary to the Gilahina River. It is at an elevation of about 4,700 feet, 3,500 feet west-northwest of peak 6820 and 4,300 feet southeast of elevation 6444. The site is in the NE1/4 of section 33, T. 4 S., R. 10 E. of the Copper rRver Meridian. This is locality 102 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Chalcopyrite(?)

Gangue minerals:

Geologic description:
MacKevett (1976) describes this as a vein- and disseminated-type deposit in altered upper Paleozoic volcanic rocks. A sample contained 3 parts per million (ppm) silver and 2,000 ppm copper.

Alteration:

Age of mineralization:
Late Paleozoic or younger based on the age of the host rocks (MacKevett, 1978).

Deposit model:
Vein and disseminated

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Sublime

Site type: Prospect

ARDF no.: MC121

Latitude: 61.4616 **Quadrangle:** MC B-7

Longitude: 143.2772

Location description and accuracy:

This prospect is west of the junction of the Lakina River and Fohlin Creek in the SW1/4 of section 4, T. 5 S., R. 12 E. of the Copper River Meridian. This is National Park Service locality WRST-180 and it is approximately located, perhaps within a mile. The latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a copper prospect. Quaternary surficial deposits are widespread in this area and bedrock is not exposed. Bedrock exposed in the uplands within a mile to the south of this location are siliciclastic sedimentary rocks of the Triassic and Jurassic(?) McCarthy Formation and Upper Paleozoic volcanic rocks of the Station Creek Formation (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Carmalita

Site type: Prospect

ARDF no.: MC122

Latitude: 61.3470 **Quadrangle:** MC B-7

Longitude: 143.5373

Location description and accuracy:
This prospect is at an elevation of about 1,050 feet near the lower Lakina River in the SW1/4 of section 13, T. 6 S., R. 10 E. of the Copper River Meridian. This is National Park Service locality WRST-158 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main:

Other:

Ore minerals:

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a mineral prospect but give no other information. Bedrock is not exposed in this part of the Lakina River but within a mile downstream, there are outcrops of Paleozoic metamorphic rocks (MacKevett, 1978).

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:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Golden Fleece

Site type: Prospect

ARDF no.: MC123

Latitude: 61.4822 **Quadrangle:** MC B-6

Longitude: 143.2408

Location description and accuracy:
This prospect is at an elevation of about 2,150 feet on Fohlin Creek near the mouth of Bear Creek, in the NW1/4 of section 33, T. 4 S., R. 12 E. of the Copper River Meridian. This is National Park Service locality WRST-169 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold prospect. Quaternary surficial deposits cover this area and bedrock is not exposed. Cretaceous siliciclastic sedimentary rocks intruded by Tertiary hypabyssal felsic plutons probably make up most of the unexposed bedrock in the area (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC124

Latitude: 61.4741 **Quadrangle:** MC B-6

Longitude: 143.1613

Location description and accuracy:
This occurrence is near the head of Fall Creek. It is at an elevation of about 5,800 feet, 3,500 feet northwest of elevation 6956 in the SW1/4 of section 36, T. 4 S., R. 12 E. of the Copper River Meridian. This is locality 98 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Au

Other:

Ore minerals: Gold(?)

Gangue minerals:

Geologic description:
This occurrence consists of a sample of float of altered Tertiary granodiorite that contains 2 parts per million (ppm) silver and 0.2 ppm gold (MacKevett, 1976).

Alteration:

Age of mineralization:
Tertiary based on the age of the granodiorite host rock.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC125

Latitude: 61.4669 **Quadrangle:** MC B-6

Longitude: 143.1580

Location description and accuracy:
This occurrence is at the head of Fall Creek. It is at an elevation of about 5,000 feet, 2,000 feet west of elevation 6956 in the NW1/4 of section 6, T. 5 S., R. 13 E. of the Copper River Meridian. This is locality 79 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Au

Other:

Ore minerals: Gold(?)

Gangue minerals: Quartz

Geologic description:
This occurrence consists of a a 1- to 2-inch thick quartz vein that cuts Tertiary granodiorite (MacKevett, 1976). A sample of the vein contained 7 parts per million (ppm) silver, 0.4 ppm gold, and 5,000 ppm arsenic.

Alteration:

Age of mineralization:
Tertiary based on the age of the granodiorite host rock.

Deposit model:
Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC126

Latitude: 61.4634 **Quadrangle:** MC B-6

Longitude: 143.2485

Location description and accuracy:
This prospect is on Fohlin Creek at an elevation of 1,950 feet. It is in the west-central part of section 3, T. 5 S., R. 12 E. of the Copper River Meridian. This is National Park Service locality WRST-171 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold prospect. Quaternary surficial deposits cover this area and bedrock is not exposed. Cretaceous siliciclastic sedimentary rocks intruded by Tertiary hypabyssal felsic plutons probably make up most of the unexposed bedrock in the area (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east side of Fireweed Mountain)

Site type: Occurrence

ARDF no.: MC127

Latitude: 61.4576 **Quadrangle:** MC B-6

Longitude: 143.0272

Location description and accuracy:
This occurrence is on a ridge on the east side of Fireweed Mountain. It is at an elevation of about 5,050 feet, 4,500 feet northwest of elevation 4945 and 2,600 feet south of the center of section 2, T. 5 S., R. 13 E. of the Copper River Meridian. This is locality 78 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Chalcopyrite(?)

Gangue minerals: Quartz(?)

Geologic description:
This occurrence consists of a 6-inch-wide altered quartz(?) vein that cuts Tertiary granodiorite (MacKevett, 1976, 1978). A sample of the vein contained 1.5 parts per million (ppm) silver and 2,000 ppm copper.

Alteration:
Oxidation?

Age of mineralization:
Tertiary based on the age of the granodiorite host rock.

Deposit model:
Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (on Lakina River)

Site type: Prospect?

ARDF no.: MC128

Latitude: 61.4510 **Quadrangle:** MC B-6

Longitude: 143.2492

Location description and accuracy:

This prospect(?) is on the Lakina River at an elevation of about 1,800 feet; it is in the west-central part of section 10, T. 5 S., R. 12 E. of the Copper River Meridian. It is identified as locality WRST-239 on an unpublished National Park Service map but the accompanying data are for a copper occurrence on Nugget Creek in the McCarthy C-8 quadrangle. It is assumed that this is a valid mineral location and that it is probably a placer gold prospect.

Commodities:

Main: Au?

Other:

Ore minerals: Gold(?)

Gangue minerals:

Geologic description:

This area is identified as locality WRST-239 on an unpublished National Park Service map but the accompanying data are for a copper occurrence on Nugget Creek in the McCarthy C-8 quadrangle. It is assumed that this is a valid mineral location and that it is probably a placer gold prospect. Quaternary surficial deposits cover this area and bedrock is not exposed. The rocks under the nearby uplands are mainly metamorphic rocks and Cretaceous siliciclastic sedimentary rocks, intruded by Tertiary hypabyssal felsic plutons (MacKevett, 1978).

Alteration:

Age of mineralization:

Quaternary?

Deposit model:

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of Fireweed Mountain)

Site type: Prospect

ARDF no.: MC129

Latitude: 61.4160 **Quadrangle:** MC B-6

Longitude: 143.1644

Location description and accuracy:
This prospect is on an unnamed creek south of Fireweed Mountain. It is at an elevation of about 2,050 feet, 1.7 miles north of the McCarthy road,and 1.7 miles south of elevation 4937. The site is in the NW1/4 of section 26, T. 5 S., R. 12 E. of the Copper River Meridian. This is National Park Service locality WRST-172 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold prospect. Quaternary surficial deposits cover this area and bedrock is not exposed. Cretaceous siliciclastic sedimentary rocks intruded by Tertiary hypabyssal felsic plutons make up the bedrock upstream on Fireweed Mountain (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Devine

Site type: Mine

ARDF no.: MC130

Latitude: 61.4039 **Quadrangle:** MC B-6

Longitude: 143.1264

Location description and accuracy:
An unpublished National Park Service map locates this mine on the north side of the McCarthy road. The mine is approximately located at an elevation of about 1,700 feet on an unnamed west tributary to Tractor Creek. It is in about the center of the north boundary of section 36, T. 5 S., R. 12 E. of the Copper River Meridian. This is National Park Service locality WRST-173 and the latitude and longitude for his record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold mine. Quaternary glaciofluvial deposits cover bedrock throughout this area (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (Kennicott River)

Site type: Occurrence?

ARDF no.: MC131

Latitude: 61.3939 **Quadrangle:** MC B-6

Longitude: 143.0033

Location description and accuracy:

This locality is on the flood plain of the Kennicott River about 1 mile upstream of its mouth. It is in the SE1/4 of section 34, T. 5 S., R. 13 E. of the Copper River Meridian. This is National Park Service locality WRST-186 as shown on an unpublished map. However, the accompanying database contains information for the Nikolai Butte prospect (MC163). The site for this occurrence is assumed to be a valid locality although no other information is available.

Commodities:

Main:

Other:

Ore minerals:

Gangue minerals:

Geologic description:

This is National Park Service locality WRST-186 as shown on an unpublished map; however, the accompanying database contains information for the Nikolai Butte prospect (MC163). The site for this record is assumed to be a valid locality, although other information is not available.

Alteration:

Age of mineralization:

Deposit model:

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

Production Status:

Site Status:

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Tjosevig

Site type: Prospect

ARDF no.: MC132

Latitude: 61.4978 **Quadrangle:** MC B-5

Longitude: 142.7748

Location description and accuracy:

This prospect is on the east valley wall of McCarthy Creek on the north flank of Green Butte. It is at an elevation of about 3,600 feet, 2,400 feet west of elevation 5720 near the northwest corner of section 30, T. 4 S., R. 15 E. of the Copper River Meridian. The prospect is shown as quarry symbol on the McCarthy B-5 quadrangle (1994 edition). This is locality 88 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) included this prospect under the name 'Tjosevig'.

Commodities:

Main: Cu

Other: Ag?

Ore minerals: Azurite, malachite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of malachite and azurite that forms thin films and veinlets along fractures in the lower part of the Triassic Chitistone Limestone (Miller, 1946; MacKevett, 1976). Eight claims were patented in 1928 and the deposits were explored by a short adit that was caved near the portal by 1943 (Miller, 1946). Copper mineralization is widespread in Chitistone Limestone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is widespread in Chitistone Limestone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Eight claims were patented in 1928 and the deposits were explored by a short adit that was caved near the portal by 1943 (Miller, 1946).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; MacKevett, 1974; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Green Butte

Site type: Mine

ARDF no.: MC133

Latitude: 61.4905 **Quadrangle:** MC B-5

Longitude: 142.7637

Location description and accuracy:

This mine is on the west flank of the ridge between McCarthy Creek and its east fork (MacKevett, 1974). It is at an elevation of about 4,000 feet, 1,700 feet northeast of elevation 3330 in the SW1/4 of section 30, T. 4 S., R. 15 E. of the Copper River Meridian. This is locality 87 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) included this mine under the name 'Green Butte'. The mine is shown on the McCarthy B-5 topographic map (1994 edition).

Commodities:

Main: Ag, Cu

Other:

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

Gangue minerals: Calcite

Geologic description:

The deposit at this mine consists of discontinuous vein-like bodies of chalcocite with lesser amounts of bornite, covellite, malachite, and azurite that are localized along both bedding plane and steep crosscutting faults in the basal part of the Triassic Chitistone Limestone (Miller, 1946; MacKevett, 1976). The copper minerals replace limestone and fill openings in ore bodies that are up to 4 feet thick; calcite fills openings along some steep faults. Copper mineralization is widespread in Chitistone Limestone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

The deposits were discovered about 1909 and 19 claims and 4 mill sites were patented in 1924. A total of 14,000 feet of underground workings on 8 levels including 11,000 feet of drifts, 1,500 feet of declines, and 2,500 feet of raises, winzes, and stopes, explored and developed the deposits between 1922 and 1925 (Miller, 1946). About 1,500 tons of ore containing 1,200 pounds of copper per ton and 10 ounces of silver per ton were produced between 1922 and 1925 (Miller, 1946).

Alteration:

Oxidation.

Age of mineralization:
Cretaceous? Copper mineralization is widespread in Chitistone Limestone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The deposits were discovered about 1909 and 19 claims and 4 mill sites were patented in 1924. A total of 14,000 feet of underground workings on 8 levels including 11,000 feet of drifts, 1,500 feet of declines, and 2,500 feet of raises, winzes, and stopes, explored and developed the deposits between 1922 and 1925 (Miller, 1946).

Production notes:
About 1,500 tons of ore containing 1,200 pounds of copper per ton and 10 ounces of silver per ton were produced between 1922 and 1925 (Miller, 1946).

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; MacKevett, 1974; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (head of north fork of Nikolai Creek)

Site type: Prospect

ARDF no.: MC134

Latitude: 61.4723 **Quadrangle:** MC B-5

Longitude: 142.6738

Location description and accuracy:

This prospect is along the west valley wall at the head of the north fork of Nikolai Creek. The site is at an elevation of about 5,100 feet, 4,200 feet northeast of elevation 4670 and 4,000 feet southwest of elevation 5966. It is about 2,000 feet south of the center of section 34, T. 4 S., R. 15 E. of the Copper River Meridian. This is locality 75A of MacKevett (1976; the location is approximate, perhaps within a half mile.

Commodities:

Main: Cu?

Other:

Ore minerals:

Gangue minerals:

Geologic description:

MacKevett (1976) identifies this site as the general location of diamond drilling of geochemical anomalies in the early 1960s. The targets were copper deposits like those in the Kennecott mine area (MC093 for example).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Some diamond drilling in the early 1960's.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (on ridge west of Nizina River)

Site type: Prospect

ARDF no.: MC135

Latitude: 61.4717 **Quadrangle:** MC B-5

Longitude: 142.6491

Location description and accuracy:
This prospect is on the ridge crest between the head of Nikolai Creek and the Nizina River. It is at an elevation of about 5,700 feet, 7,000 feet north of elevation 5720 in the SW1/4 of section 35, T. 4 S., R. 15 E. of the Copper River Meridian. This is locality 76 of MacKevett (1976); the location is approximate, perhaps within a half mile.

Commodities:

Main: Cu?

Other:

Ore minerals:

Gangue minerals:

Geologic description:
MacKevett (1976) identifies this locality as a prospect where diamond drilling tested subsurface geophysical anomalies in the early 1960s. The targets were copper deposits like those in the Kennecott mine area (MC093 for example).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Some diamond drilling in the 1960's on geophysical anomalies.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Nikolai

Site type: Prospect

ARDF no.: MC136

Latitude: 61.4637 **Quadrangle:** MC B-5

Longitude: 142.6765

Location description and accuracy:

This prospect is on the north fork of Nikolai Creek (MacKevett, 1974). It is at an elevation of about 4,300 feet, 2,000 feet east-southeast of elevation 4670, and 1,500 feet west of the center of section 2, T. 5 S., R. 15 E. of the Copper River Meridian. This is locality 75 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) include this prospect under the name 'Nikolai'. This mine is shown on the McCarthy B-5 topographic map (1994 edition).

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, chalcopyrite, malachite, pyrite, pyrrhotite

Gangue minerals: Calcite, epidote, quartz

Geologic description:

This prospect consists of two iron-stained quartz-calcite-epidote veins, 1 to 4 feet thick, that contain bornite, chalcopyrite, pyrite, pyrrhotite, and malachite (Miller, 1946). The veins are localized in shear zones that cut Triassic Nikolai Greenstone about 150 feet below the contact with overlying Triassic Chitistone Limestone. The veins were first staked in 1899 and 7 claims were patented in 1904. About 300 feet of underground workings, completed by 1911, explored the deposits. Perhaps 1,500 tons of material that contain 25 percent or more copper were delineated (Miller, 1946). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to

have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The veins were first staked in 1899 and 7 claims were patented in 1904. About 300 feet of underground workings, completed by 1911, explored the deposits and perhaps 1,500 tons of material with 25 percent or more copper were delineated (Miller, 1946).

Production notes:

Reserves:
About 1,500 tons of material with 25 percent or more copper were delineated by underground exploration (Miller, 1946).

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; MacKevett, 1974; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Schultze

Site type: Prospect

ARDF no.: MC137

Latitude: 61.4559 **Quadrangle:** MC B-5

Longitude: 142.6409

Location description and accuracy:

This prospect is on the steep west valley wall of the Nizina River, north of Park Gulch. It is at an elevation of about 4,600 feet, 2,800 feet south of elevation 5720 and about 2,000 feet north-northwest of the center of section 12, T. 5 S., R. 15 E. of the Copper River Meridian. This is locality 74 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of a small chalcocite-rich pod and chalcocite-bearing stringers in the lower part of the Triassic Chitistone Limestone (MacKevett, 1976). The prospect was explored by two short adits. Copper mineralization is widespread in the lower Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is widespread in the lower Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23) and/or Kennecott-type copper deposit (after MacKevett and others, 1997)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored by two short adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1974; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Porphyry Mountain

Site type: Prospect

ARDF no.: MC138

Latitude: 61.4426 **Quadrangle:** MC B-5

Longitude: 142.8323

Location description and accuracy:
This prospect is at an elevation of 4,000 feet on the southwest flank of Bonanza Ridge. It is 9,500 feet south of Porphyry Mountain and 3,000 feet west-southwest of elevation 6309 in the SE1/4 of 11, T. 5 S., R 14 E. of the Copper River Meridian. This is locality 77 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Au, Mo

Other: As, Cu, W

Ore minerals: Chalcopyrite, molybdenite

Gangue minerals: Quartz

Geologic description:
The deposit at this prospect consists of a discontinuous quartz vein up to 20 inches thick with molybdenite and minor chalcopyrite that is localized along a fault that cuts Tertiary granodiorite (MacKevett, 1976). The molybdenite occurs along the vein selvages. Samples contain as much as 200 parts per million (ppm) arsenic, 2.4 ppm gold, 100 ppm tungsten, and more than 2,000 ppm molybdenum (MacKevett and Smith, 1968). The deposit was explored by about 400 feet of underground workings.

Alteration:

Age of mineralization:
Tertiary based on the age of the granodiorite host rock (MacKevett, 1974).

Deposit model:
Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored by about 400 feet of underground workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1974; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Snow Bird

Site type: Prospect

ARDF no.: MC139

Latitude: 61.3956 **Quadrangle:** MC B-5

Longitude: 142.5115

Location description and accuracy:

This prospect is on the west valley wall of Boulder Creek, a north tributary to Dan Creek (MacKevett, 1974). It is at an elevation of about 4,000 feet, 2,500 feet north-northwest of elevation 4480 in the NE1/4 of section 34, T. 5 S., R. 16 E. of the Copper River Meridian. This is locality 71 of MacKevett (1976); the location is accurate to within a few hundred feet. Cobb and MacKevett (1980) included this prospect under the name 'Snow Bird'.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Bornite, chalcocite, chalcopyrite, pyrite

Gangue minerals: Calcite, quartz

Geologic description:

The deposit at this prospect consists of a 1.5- to 5-foot-wide quartz-calcite vein that contains bornite, chalcocite, chalcopyrite, and pyrite; the vein is localized along a shear zone in Triassic Nikolai Greenstone (MacKevett and Smith, 1968; MacKevett, 1976). Samples of the vein material contained up to 50 parts per million (ppm) silver, 0.1 ppm gold, 1,000 ppm manganese, and more than 20,000 ppm copper (MacKevett and Smith, 1968, samples 9-12). The prospect was explored by two short adits. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored by two short adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1974; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Snowbird

Site type: Prospect

ARDF no.: MC140

Latitude: 61.3833 **Quadrangle:** MC B-5

Longitude: 142.5233

Location description and accuracy:

This prospect is near Boulder Creek, a north tributary to Dan Creek. It is on Boulder Creek at an elevation of about 2,700 feet, 3,400 feet southwest of elevation 4480. It is in the NW1/4 of section 3, T. 6 S., R. 16 E. of the Copper river Meridian. This is National Park Service locality WRST-211 and the latitude and longitude for this record were provided by the National Park Service. Although this National Park Service map location is somewhat distant, this is probably the Snow Bird prospect described as MC139.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a copper vein prospect. Bedrock in the area is Triassic Nikolai Greenstone (MacKevett, 1974). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1974; MacKevett and others, 1997.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Dan Creek

Site type: Mine

ARDF no.: MC141

Latitude: 61.3758 **Quadrangle:** MC B-5

Longitude: 142.5278

Location description and accuracy:

Dan Creek is an east tributary to the Nizina River. About 2.2 miles of Dan Creek above an elevation of 1,800 feet and extending into the McCarthy B-4 quadrangle, have been placer mined (MacKevett, 1976). For this record, the site is at the mouth of Boulder Creek in the SW1/4 of section 3, T. 6 S., R. 16 E. of the Copper River Meridian. This is locality 57 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) included this mine under the name 'Dan Cr.'.

Commodities:

Main: Au

Other: Ag, Cu, Pb, Sb

Ore minerals: Galena, gold, native copper, native silver, stibnite

Gangue minerals:

Geologic description:

About 2.2 miles of Dan Creek above an elevation of 1,800 feet and extending into the McCarthy B-4 quadrangle, have been placer mined (MacKevett, 1976). Stream gravels in the active drainage are 8 to 12 feet thick but the gold is concentrated in the lower 2 feet and in the underlying fractured bedrock (Moffit and Capps, 1911). Very little of the gold is fine-grained; most is coarse, smooth, and accompanied by abundant native copper. A native copper nugget weighing 3 tons was recovered in 1939 (Miller, 1946). Native silver and some stibnite were also recovered and some of the native silver is intergrown with native copper. A large part of the gold and other heavy minerals in Dan Creek were re-concentrated from glaciofluvial deposits in benches along the valley of Dan Creek. The bench deposits are auriferous and some have been mined. Some mining occurred in Dan Creek as late as the 1970s (MacKevett, 1976). Slightly less than half of the estimated 143,500 ounces of gold produced from the Nizina district were recovered from Dan Creek (MacKevett, 1976). About 40 tons of native copper were also recovered and sold (Cobb and MacKevett, 1980). The bedrock in Dan Creek is Cretaceous siliciclastic sedimentary rocks locally intruded by felsic hypabyssal dikes (MacKevett, 1974).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Yes; medium

Site Status: Inactive

Workings/exploration:
Placer mining in Dan Creek was mostly done by small-scale opencut and hydraulic methods. Some drift mining or exploration occurred in the bench deposits.

Production notes:
Slightly less than half of the estimated 143,500 ounces of gold produced from the Nizina district were recovered from Dan Creek (MacKevett, 1976). About 40 tons of native copper were also recovered and sold (Cobb and MacKevett, 1980).

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Capps, 1911; MacKevett, 1974; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit and Capps, 1911

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of upper Crumb Gulch)

Site type: Prospect

ARDF no.: MC142

Latitude: 61.3508 **Quadrangle:** MC B-5

Longitude: 142.5254

Location description and accuracy:

This prospect is on the west side of Williams Peak and north of the head of Crumb Gulch (MacKevett, 1974). The site is at an elevation of about 6,000 feet, about 400 feet west of elevation 6280 in the NW1/4 of section 15, T. 6 S., R. 16 E. of the Copper River Meridian. This is locality 56 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Ag, Au, Sb

Other:

Ore minerals: Chalcopyrite, gold, pyrite, realgar, stibnite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of veins that contain gold, stibnite, realgar, chalcopyrite, and pyrite; the veins are up to 1 foot thick along shear zones that cut hornfels adjacent to Tertiary granodiorite (MacKevett and Smith, 1968; MacKevett, 1974, 1976). Samples contain as much as 15 parts per million (ppm) silver, 66 ppm gold, and more than 10,000 ppm antimony (MacKevett and Smith, 1968, samples 13-16). A few veins in the granodiorite contain masses of stibnite more than 3 feet long and as much as 1 foot wide. The deposits were explored by two short adits and surface workings.

Alteration:

Age of mineralization:

Tertiary; the mineralization is in the contact zone of Tertiary granodiorite (MacKevett, 1974).

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposits were explored by two short adits and surface workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1974; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Alaska Gold King Mines, Ltd.

Site type: Prospect

ARDF no.: MC143

Latitude: 61.3441 **Quadrangle:** MC B-5

Longitude: 142.5443

Location description and accuracy:
This prospect is near Crumb Gulch, a small stream on the east valley wall of the Nizina River between Dan and Chititu creeks. The prospect is at an elevation of about 3,500 feet, 5,000 feet southwest of Willams Peak in the SE1/4 of section 16, T. 6 S., R. 16 E. of the Copper River Meridian. This is National Park Service locality WRST-215 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other: Ag, Sb

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold, silver, and antimony prospect. Bedrock in this area is Cretaceous siliciclastic sedimentary rocks that are locally intruded by felsic hypabyssal dikes (MacKevett, 1974).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1974.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Gold Queen

Site type: Prospect

ARDF no.: MC144

Latitude: 61.3286 **Quadrangle:** MC B-5

Longitude: 142.5094

Location description and accuracy:
This prospect is on Sheep Gulch, a small north tributary to Rex Creek. It is at an elevation of about 4,000 feet in the SE1/4 of section 22, T. 6 S., R. 16 E. of the Copper River Meridian. This is National Park Service locality WRST-217 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other: Ag, Cu

Ore minerals: Gold, native copper, native silver

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold, silver, and copper prospect. Bedrock in this area is Cretaceous siliciclastic sedimentary rocks that are locally intruded by felsic hypabyssal dikes (MacKevett, 1974).

Alteration:

Age of mineralization:
Quaternary.

Deposit model:
Placer Cu-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 surface pits or trenches may be present.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1974.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Chititu Creek; Rex Creek; White Creek; Blygh Gulch; Jolly Gulch; Dry Gulch

Site type: Mine

ARDF no.: MC145

Latitude: 61.2962 **Quadrangle:** MC B-5

Longitude: 142.5785

Location description and accuracy:

Chititu Creek is a south tributary to the Nizina River. MacKevett (1976) shows placer gold mining along 2.75 miles of Chititu Creek downstream from the mouth of White Creek; along 1.2 miles of Rex Creek upstream from the mouth of White Creek; and on White Creek and its tributaries Blygh Gulch, Jolly Gulch, and Dry Gulch. The site for this record is the junction of Chititu, Rex, and White Creeks. This is locality 39 of MacKevett (1976); the location is accurate. Cobb and MacKevett (19870) included this area under the name 'Chititu Cr.'.

Commodities:

Main: Au

Other: Ag, Cu, Pb, Sb

Ore minerals: Galena, gold, native copper, native silver, pyrite, stibnite

Gangue minerals:

Geologic description:

MacKevett (1976) shows placer gold mining along 2.75 miles of Chititu Creek downstream from the mouth of White Creek; along 1.2 miles of Rex Creek upstream from the mouth of White Creek; and on White Creek and its tributaries Blygh Gulch, Jolly Gulch, and Dry Gulch. Bench and stream placers were mined on Chititu Creek and its tributaries. The richest stream placers were reconcentrated from the benches. The gold is mostly on or near bedrock or in fractured bedrock below 8 to 16 feet of gravels of the active streams. The gold is mostly distributed across the entire width of the active flood plain although a well-defined paystreak was found on the lower part of the pay on Chititu Creek (Moffit and Capps, 1911). The gravels are diverse in lithology and contain boulders and blocks to 8 feet across. The gold was mostly fine. It was accompanied by abundant native copper, pyrite, galena, stibnite, and barite. Native silver was also recovered and included nuggets up to 7 pounds in weight, intergrown with quartz (Moffit and Capps, 1911). Native lead recovered with the gold was at least in part lead shot from firearms use in the area. Bedrock in this area is Cretaceous siliciclastic rocks intruded locally

by felsic hypabyssal dikes. Glaciofluvial materials, all carrying some gold and up to a few hundred feet thick, form bench deposits along all the productive drainages (Moffit and Capps, 1911; MacKevett, 1974). Small-scale hydraulic operations and some dredging took place in this area. Some mining took place as recently as the 1970s. A large part of the recovered gold, over half of the estimated 143,500 ounces produced from the Nizina district, was probably reworked from the bench deposits.

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Yes; medium

Site Status: Inactive

Workings/exploration:
Small-scale hydraulic operations and some dredging took place in this area. Some mining took place as recently as the 1970s.

Production notes:
This area accounted for more than half of the estimated 143,000 ounces of gold recovered from the Nizina district (MacKevett, 1976).

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Capps, 1911; MacKevett, 1974; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit and Capps, 1911

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (in Contact Gulch)

Site type: Prospect

ARDF no.: MC146

Latitude: 61.4943 **Quadrangle:** MC B-4

Longitude: 142.3129

Location description and accuracy:

This prospect is in Contact Gulch about a half mile upstream of its mouth on the Chitistone River. It is at an elevation of about 3,000 feet in the NW1/4 of section 27, T. 4 S., R. 17 E. of the Copper River Meridian. This is locality 82 of MacKevett (1976); the location is accurate to within a few hundred feet. Cobb and MacKevett (1980) included this prospect under the name 'Contact Gulch'.

Commodities:

Main: Cu

Other:

Ore minerals: Bornite, malachite

Gangue minerals:

Geologic description:

At this prospect, surface pits and cuts explored scattered bornite-bearing veinlets and malachite-coated fractures in Triassic Nikolai Greenstone (MacKevett and Smith, 1972; MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface pits and cuts explored this prospect.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC147

Latitude: 61.4930 **Quadrangle:** MC B-4

Longitude: 142.2800

Location description and accuracy:

This occurrence is low on the south valley wall of the Chitistone River. It is at an elevation of about 2,900 feet, 6,000 feet northeast of the mouth of Toby Creek and 6,500 feet northwest of elevation 6930. The site is in the NE1/4 of section 26, T. 4 S., R. 17 E. of the Copper River Meridian. This is locality 83 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Chalcocite, malachite

Gangue minerals:

Geologic description:

This occurrence consists of chalcocite- and malachite-bearing veinlets and copper-stained amygdules in the lower part of Triassic Nikolai Greenstone (MacKevett and Smith, 1972; MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1972; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (on Chitistone Mountain)

Site type: Occurrence

ARDF no.: MC148

Latitude: 61.4893 **Quadrangle:** MC B-4

Longitude: 142.4889

Location description and accuracy:

This occurrence is on Chitistone Mountain. It is at an elevation of about 6,500 feet, 2,000 feet west-southwest of elevation 6844 in the SW1/4 of section 27, T. 4 S., R. 16 E. of the Copper River Meridian. This is locality 86 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Au, Ba

Other:

Ore minerals: Barite, gold

Gangue minerals: Calcite

Geologic description:

This occurrence consists of a 30-foot-wide altered zone that contains calcite and barite that is localized along a thrust fault in Triassic limestone (MacKevett, 1976). A sample of the altered zone contained 2,000 parts per million (ppm) arsenic, 0.03 ppm gold, more than 5,000 ppm barium, 500 ppm nickel, and more than 20 percent iron (MacKevett and Smith, 1968).

Alteration:

Calcite and barite replacement?

Age of mineralization:

Triassic or younger based on the age of the host rocks.

Deposit model:

Barite vein or replacement

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Houghton Alaska

Site type: Prospect

ARDF no.: MC149

Latitude: 61.4878 **Quadrangle:** MC B-4

Longitude: 142.3384

Location description and accuracy:

Several small prospects are near an unnamed small tributary on the north valley wall of the Chitistone River. The prospect is in the tributary at an elevation of about 3,700 feet, 5,000 feet east-southeast of elevation 6360. It is in the NE1/4 of section 32, T. 4 S., R. 17 E. of the Copper River Meridian. This is locality 81 of MacKevett (1976); the location is accurate within a few hundred feet. Cobb and MacKevett (1980) included this prospect under the name 'Houghton Alaska Exploration Co.'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, malachite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of secondary copper minerals, probably malachite and azurite, that coat fractures along small faults in Triassic Nikolai Greenstone near its contact with overlying Triassic Chitistone Limestone (Miller, 1946; MacKevett and Smith, 1972; MacKevett, 1976). Surface pits and trenches probably explored these deposits. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface pits and trenches probably explored these deposits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Chitistone River)

Site type: Prospect

ARDF no.: MC150

Latitude: 61.4734 **Quadrangle:** MC B-4

Longitude: 142.4484

Location description and accuracy:

This prospect is on the north valley wall of the Chitistone River, one half mile west of Grotto Creek. It is at an elevation of about 4,000 feet, 5,000 feet southeast of elevation 6350 in the SE1/4 of section 35, T. 4 S., R. 16 E of the Copper River Meridian. This is locality 85 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite(?), bornite(?), chalcocite(?), malachite(?)

Gangue minerals:

Geologic description:

The deposit at this prospect consists of small masses of unspecified copper minerals that are localized near the apex of an overturned fold in the Triassic Nikolai Greenstone (MacKevett, 1976). Some surface exploration took place here as recently as the 1970s (MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation?

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Some surface exploration took place here as recently as the 1970s (MacKevett, 1976).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Peavine Bar

Site type: Prospect

ARDF no.: MC151

Latitude: 61.4623 **Quadrangle:** MC B-4

Longitude: 142.4738

Location description and accuracy:

This this is an area of mining claims and mill sites on the north side of the flood plain of the Chitistone River. The site is about 6,000 feet west of the mouth of Grotto Creek in the SW1/4 of section 1, T. 5 S., R. 16 E. of the Copper River Meridian. National Park Service localities WRST-206 and WRST-255 are included in this record. The latitude and longitude for this record are for locality WRST-206 and were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this as an area of mining claims and mill sites. Some are for a copper lode mine and camp but they may primarily have supported exploration of deposits on the valley walls of Chitistone River, such as the deposits at MC200 and MC207.

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type:

ARDF no.: MC152

Latitude: 61.4557 **Quadrangle:** MC B-4

Longitude: 142.1765

Location description and accuracy:

This occurrence is on the ridge north of the glacier at the head of Toby Creek (MacKevett and Smith, 1972). It is at an elevation of about 8,000 feet near the northwest corner of section 10, T. 5 S., R. 18 E. of the Copper River Meridian. This is locality 63 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other: Ag

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of a 1- to 3-meter-wide altered zone is at the contact between Permian or Triassic gabbro and Permian sedimentary rocks (MacKevett and Smith, 1972; MacKevett, 1976). A sample of the altered rocks contained 2 parts per million (ppm) silver and 20,000 ppm copper.

Alteration:

Age of mineralization:

Permian or younger based on the age of the host rocks.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1972; MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west of upper Toby Creek)

Site type: Occurrence

ARDF no.: MC153

Latitude: 61.4537 **Quadrangle:** MC B-4

Longitude: 142.2808

Location description and accuracy:

This occurrence is on the ridge south of Toby Creek. it is at an elevation of about 6,400 feet, 2,500 feet northwest of elevation 7140 and 1,500 feet north of the center of section 12, T. 5 S., R. 17 E. of the Copper River Meridian. This is locality 70 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Cu

Other: Ag, As

Ore minerals: Azurite, malachite

Gangue minerals:

Geologic description:

This occurrence consists of a 2- to 3-foot-wide, malachite- and azurite-bearing vein in a fault zone that cuts Triassic Nikolai Greenstone (MacKevett and Smith, 1972; MacKevett, 1976). A sample of the vein contained 2 parts per million (ppm) silver, 500 ppm arsenic, and 20,000 ppm copper (MacKevett and Smith, 1968, sample 111). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Nelson

Site type: Mine

ARDF no.: MC154

Latitude: 61.4506 **Quadrangle:** MC B-4

Longitude: 142.3843

Location description and accuracy:

This mine is low on the west valley wall of lower Glacier Creek. It is at an elevation of about 2,900 feet, 1,400 feet southwest of the Glacier Creek landing strip, and 2,500 feet north-northwest of elevation 3675. The site is in the NW1/4 of section 9, T. 5 S., R. 17 E. of the Copper River Meridian. This is locality 69 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) include this mine under the name 'Nelson (Glacier Cr.)'.

Commodities:

Main: Cu

Other: Ag, As

Ore minerals: Azurite, bornite, chalcocite, chalcopyrite, covellite, enargite, malachite, native copper

Gangue minerals:

Geologic description:

This mine is near basalt just above the basal part of a faulted block of Upper Triassic Chitistone Limestone (MacKevett and Smith, 1972). The mineralization characteristically is discontinuous stringers and masses of chalcocite and lesser covellite, enargite, bornite, chalcopyrite, malachite, and native copper along steeply inclined narrow fissures and bedding planes (Bateman, 1932; Miller, 1946; Sainsbury, 1951; MacKevett, 1976). Chip samples across veins of massive sulfide assayed more than 2 percent copper, 0.3 percent arsenic, and 50 parts per million silver (MacKevett and Smith, 1968). The mineralized area is extensively fractured and faulted. The deposits were explored in the 1930s by surface cuts and about 1,100 feet of underground workings in 5 adits on 4 levels (Miller, 1946; Sainsbury, 1951). Some diamond drilling also explored the deposits.

Copper mineralization is common in the Chitistone Limestone and underlying Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation was very minor and restricted to thin veneers of malachite and azurite (Bateman, 1932).

Age of mineralization:

Cretaceous? Copper mineralization is common in the Chitistone Limestone and underlying Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Kennecott-type copper deposit (after MacKevett and others, 1997)

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

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

The deposits were explored in the 1930s by surface cuts and about 1,100 feet of underground workings in 5 adits on 4 levels (Miller, 1946; Sainsbury, 1951). Some diamond drilling also explored the deposits.

Production notes:

Several tons of chalcocite-rich ore were mined by Kennecott Copper Corporation in 1929-30.

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Bateman, 1932; Miller, 1946; Sainsbury, 1951; MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Bateman, 1932

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Peavine

Site type: Mine

ARDF no.: MC155

Latitude: 61.4484 **Quadrangle:** MC B-4

Longitude: 142.4867

Location description and accuracy:

This mine is on the south valley wall of the Chitistone River east of the lower part of Lime Spring Creek. It is at an elevation of about 3,200 feet, 3,500 feet northwest of elevation 5615, about 1,000 feet south of the center of section 11, T. 5 S., R. 16 E. of the Copper River Meridian. This is locality 73 of MacKevett (1976); the location is accurate to within a few hundred feet. Cobb and MacKevett (1980) included this mine under the name 'Peavine'.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite, chalcocite, malachite

Gangue minerals:

Geologic description:

The deposit at this mine consists of malachite and azurite with some chalcocite that occurs in a brecciated fault zone that cuts both Triassic Chitistone Limestone and underlying Triassic Nikolai Greenstone (Miller, 1946; MacKevett and Smith, 1972; MacKevett, 1976). A small amount of mineralized material was shipped in the winter of 1973-74 (MacKevett, 1976). The mine was developed by a short adit and surface workings. Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The mine was developed by a short adit and surface workings.

Production notes:
A small amount of mineralized material was shipped in the winter of 1973-74 (MacKevett, 1976).

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of lower Glacier Creek)

Site type: Prospect

ARDF no.: MC156

Latitude: 61.4362 **Quadrangle:** MC B-4

Longitude: 142.3996

Location description and accuracy:

This prospect is on the ridge south of lower Glacier Creek. It is about 6,000 feet upslope (southwest) from the Nelson mine (MC154) on the east side of hill 6640. The site is near the center of the NE1/4 of section 17, T. 5 S., R. 17 E. of the Copper River Meridian. This is locality 68 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other: Ag, Au

Ore minerals:

Gangue minerals: Calcite

Geologic description:

The deposit at this prospect consists of calcite-rich veins up to 3 feet thick in the lower part of the Triassic Chitistone Limestone (MacKevett, 1976). A sample contained 1 part per million (ppm) silver, 0.1 ppm gold, and 2,000 ppm copper (MacKevett and Smith, 1968). The prospect was explored with surface pits and trenches. Mineralization at this prospect may be related to the widespread copper mineralization in the Triassic Nikolai Greenstone and Chitistone Limestone that is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Mineralization at this prospect may be related to the widespread copper mineralization in the Triassic Nikolai Greenstone and Chitistone Limestone that is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The prospect was explored with surface pits and trenches.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Radovan; Greenstone claims

Site type: Prospect

ARDF no.: MC157

Latitude: 61.4245 **Quadrangle:** MC B-4

Longitude: 142.3543

Location description and accuracy:

This prospect is on the nose of the ridge between Radovan Gulch and Glacier Creek. It is at an elevation of about 3,550 feet, 1,800 feet east of Radovan Gulch in the NW1/4 of section 22, T. 5 S., R. 17 E. of the Copper River Meridian. This is locality 67 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) included this prospect under the name 'Radovan'.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Bornite, chalcocite, covellite, cuprite, enargite, malachite, native copper

Gangue minerals: Calcite, chalcedony, dolomite, epidote, quartz

Geologic description:

The deposit at this prospect consists of a chalcocite-rich vein that contains lesser amounts of bornite, covellite, cuprite, enargite, malachite, and native copper; the vein is localized in a major normal-fault zone in Triassic Nikolai Greenstone (Sainsbury, 1951; MacKevett, 1976). The fault zone strikes N 15-26 E and dips 73 SE; locally it contains colloform calcite, dolomite and chalcedony (Sainsbury, 1951). The vein is 1 to 8 inches wide over 150 feet of slope distance, widens to 4 feet over a distance of 10 to 15 feet, and pinches out abruptly (Sainsbury, 1951). Samples of the mineralization contained up to 50 parts per million (ppm) silver, 0.07 ppm gold, more than 20,000 ppm copper, and 2,000 ppm manganese (MacKevett and Smith, 1968, samples 43-49). The wallrocks of the vein are silicified and epidotized (Sainsbury, 1951). This vein is located on same fault zone as the Radovan, Low Contact prospect (MC160). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Silicification, epidotization.

Age of mineralization:
Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
The prospect was explored with surface cuts and by a 65-foot-long adit that trends S 3 W from a portal that is about 250 feet below and 200 feet north of the massive chalcocite in the fault (Sainsbury, 1951).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Sainsbury, 1951; MacKevett and Smith, 1968; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Sainsbury, 1951

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Radovan; Binocular

Site type: Prospect

ARDF no.: MC158

Latitude: 61.4102 **Quadrangle:** MC B-4

Longitude: 142.3836

Location description and accuracy:

This prospect is near the ridge crest on the west side of the headwater cirque to Radovan Gulch (MacKevett and Smith, 1972). It is at an elevation of about 6,700 feet, 1,500 feet north of elevation 7850. The site is in the NW1/4 of section 28, T. 5 S., R. 17 E of the Copper River Meridian. This is locality 67 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) included it under the name 'Radovan'.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Bornite(?), chalcopyrite, chalcocite, marcasite, pyrite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of massive lenses, thin veins, and disseminations of chalcocite, pyrite, marcasite, bornite(?), and chalcopyrite in a basal unit of the dolomitic Triassic Chitistone Limestone (Miller, 1946; MacKevett, 1976). Samples of ore are reported to contain 7 to 10 percent copper (Eakins and others, 1983). The deposits have been explored by surface cuts and short underground workings. Copper mineralization is common in Nikolai Greenstone and overlying Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and overlying Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23) and/or Kennecott-type copper deposit (after MacKevett and others, 1997)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The deposits have been explored by surface cuts and short underground. workings.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980; Eakins and others, 1983; MacKevett and others, 1997.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Erickson; Erickson and Madden

Site type: Mine

ARDF no.: MC159

Latitude: 61.4080 **Quadrangle:** MC B-4

Longitude: 142.2554

Location description and accuracy:

This mine is on the north valley wall of lower Twaharpies Glacier. It is at an elevation of about 3,800 feet, 500 feet from of the glacier, and 5,800 feet southwest of peak 8235. The site is 700 feet south of the center of section 30, T. 5 S., R. 18 E. of the Copper River Meridian. This is locality 62 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) include this prospect under the name 'Erikson (and Madden)'. The mine is shown on the McCarthy B-4 topographic map (1994 edition).

Commodities:

Main: Cu

Other: Ag

Ore minerals: Chalcocite, cuprite, malachite, native copper, tenorite

Gangue minerals: Epidote, quartz

Geologic description:

This deposit consists of native copper, tenorite, cuprite, and minor amounts of chalcocite and malachite in irregular masses, thin veins, and disseminated grains in the upper parts of Triassic Nikolai Greenstone that consists of amygdaloidal lava flows. To a lesser extent, the ore minerals occurs as fillings in amygdules or associated with quartz-epidote veins in the flows (Miller, 1946; MacKevett, 1976). Most of the native copper occurs as small grains but masses up to 50 or 60 pounds have been found. Samples of the mineralization contained up to 70 parts per million (ppm) silver and more than 20,000 ppm copper (MacKevett and Smith, 1968, samples 141-146). The mine was developed by about 300 feet of underground workings and a little copper was produced in 1917 (MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Quartz-epidote veining and replacement.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

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

23

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:

The deposit was developed on 3 levels by about 300 feet of underground workings accessed from two adits.

Production notes:

A small amount of copper was produced in 1917.

Reserves:

Additional comments:

The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Miller, 1946; MacKevett and Smith, 1968; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Radovan; Low Contact

Site type: Prospect

ARDF no.: MC160

Latitude: 61.4016 **Quadrangle:** MC B-4

Longitude: 142.3716

Location description and accuracy:

This prospect in the cirque at the head of Radovan Gulch (MacKevett and Smith, 1972). It is at an elevation of about 5,200 feet, 3,000 feet southeast of elevation 7850 and 1,500 feet south of the center of section 28, T. 5 S., R. 17 E. of the Copper River Meridian. This is locality 65 of MacKevett (1976) and it is accurately located. Cobb and MacKevett (1980) included the prospect under the name 'Radovan'.

Commodities:

Main: Cu

Other: Ag, As, Sb

Ore minerals: Chalcocite, chalcopyrite, marcasite, pyrite, orpiment, realgar, stibnite

Gangue minerals: Calcite, chalcedony, dolomite, epidote, quartz

Geologic description:

The deposit at this prospect consists of a brecciated fault zone that contains sporadically distributed chalcocite, chalcopyrite, pyrite, and marcasite (Miller, 1946). Realgar, orpiment, and stibnite are also reported to be localized in the fault zone but their relation to the copper mineralization is not clear (Sainsbury, 1951). The fault zone strikes N 25 E, dips 70-75 SE and has a vertical displacement of 1000 feet; it is the same fault zone as the one at the Radovan Greenstone prospect to the north (MC157). The fault is a 100-foot-wide, shattered zone that includes limonite-stained altered zones, gouge, and broken and recemented colloform bands of calcite, dolomite, and chalcedony. Quartz and epidote are also gangue minerals in the fault zone. In one outcrop, veins of chalcocite, 1- to 6-inches wide, occur over a surface area of 50 square feet (Sainsbury, 1951). The fault zone displaces the contact between the Triassic Nikolai Greenstone and the overlying Triassic Chitistone Limestone; the mineralization is along the part of the fault that places greenstone against limestone (MacKevett and Smith, 1972). The deposit has been explored by surface trenches and 2 short adits. Copper mineralization is common in Nikolai Greenstone and overlying Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:
Oxidation is evidenced by limonite staining. Silicification and epidotization are locally present in the fault zone.

Age of mineralization:
Cretaceous? Copper mineralization is common in Nikolai Greenstone and overlying Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23) and/or Kennecott-type copper deposit (after MacKevett and others, 1997)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23?

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
The deposit has been explored by surface trenches and 2 short adits.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; Sainsbury, 1951; MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Sainsbury, 1951

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Westover

Site type: Mine

ARDF no.: MC161

Latitude: 61.3967 **Quadrangle:** MC B-4

Longitude: 142.4967

Location description and accuracy:

This mine is at the head of Boulder Creek, a north tributary to Dan Creek (MacKevett and Smith, 1972). It is at an elevation of about 4,750 feet just inside the west boundary of the McCarthy B-4 quadrangle, in the NW1/4 of section 35, T. 5 S., R. 16 E. of the Copper River Meridian. This is locality 72 of MacKevett (1976); the location is accurate within a few hundred feet. Cobb and MacKevett (1980) include this mine under the name 'Westover'.

Commodities:

Main: Cu

Other: Ag, As

Ore minerals: Bornite, chalcocite, chalcopyrite, malachite

Gangue minerals: Calcite, quartz

Geologic description:

This deposits consists of bornite and less abundant chalcocite in replacement lenses to 40 feet wide along beds in the lower part of the Triassic Chitistone Limestone. Oxidation of the copper sulfides has produced malachite and some sparse chalcopyrite has been observed (Miller, 1946). Channel samples across the mineralization contained 50 parts per million (ppm) silver, 2,000 ppm arsenic, and more than 2 percent copper (MacKevett and Smith, 1968). The bornite-rich replacements are mainly localized along small bedding-plane faults, but some mineralization is also localized along small steep faults. Calcite and quartz commonly are gangue minerals and some sulfide bodies grade laterally into silicified limestone. Copper mineralization in the Chitistone Limestone is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

This mine, first staked about 1906, was developed by 1,400 feet of underground workings on four unconnected levels (Miller, 1946, p. 108-110). Some ore was shipped in the winter of 1917-18, and in 1943 an estimated 100 tons of material grading 30 percent copper and another 100 tons of material grading 10 per cent copper were exposed in the workings (Miller, 1946).

Alteration:
Oxidation of copper sulfides; silicification of limestone.

Age of mineralization:
Cretaceous? Copper mineralization in the Chitistone Limestone is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Kennecott-type copper deposit (?) (after MacKevett and others, 1997)

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

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
This mine was first staked about 1906, was developed by 1,400 feet of underground workings on four unconnected levels, and produced a small amount of bornite-rich ore in the winter of 1917-18 (Miller, 1946, p. 108-110).

Production notes:
Some ore was shipped in the winter of 1917-18 (Miller, 1946).

Reserves:
In 1943 an estimated 100 tons of material grading 30 percent copper and another 100 tons of material grading 10 per cent copper were exposed in the workings (Miller, 1946).

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Miller, 1946; MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980; MacKevett and others, 1997.

Primary reference: Miller, 1946

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC162

Latitude: 61.3919 **Quadrangle:** MC B-4

Longitude: 142.3871

Location description and accuracy:

This occurrence is on the ridge crest between Radovan Gulch and the headwater glacier feeding Dan Creek. It is at an elevation of about 7,800 feet, 5,500 feet south of elevation 7850 and 2,500 feet northeast of elevation 7902. The occurrence is about in the center of the west boundary of section 33, T. 5 S., R. 17 E. of the Copper River Meridian. This is locality 64 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

This occurrence consists of a 10-foot wide altered fault zone that cuts Upper Triassic to Lower Jurassic(?) siliciclastic rocks of the McCarthy Formation (MacKevett, 1970 [B 1333]; MacKevett and Smith, 1972; MacKevett, 1976). A sample from the fault zone contained 1,000 parts per million (ppm) arsenic and 0.2 ppm gold (MacKevett and Smith, 1968). This is the same fault that localizes mineralization at the Radovan Low Contact prospect (MC160), 0.9 mile to the northeast.

Alteration:

Age of mineralization:

Jurassic or younger based on the age of the host rock, the McCarthy Formation.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1970 (B 1333); MacKevett and Smith, 1972; MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Nikolai Butte

Site type: Prospects

ARDF no.: MC163

Latitude: 61.3750 **Quadrangle:** MC B-4

Longitude: 142.4591

Location description and accuracy:

These prospects are on the south flank of Nikolai Butte at an elevation of about 4,200 feet, 1,700 feet south-southwest of the summit of Nikolai Butte and 1.300 feet south of the center of section 1, T. 6 S., R. 16 E. of the Copper River Meridian. This is locality 58 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Ag, Cu, Pb, Zn

Other:

Ore minerals:

Gangue minerals:

Geologic description:

Several small prospects in this area are on thin silver- and base-metal-bearing veins. The veins are localized along steep faults that cut Triassic Nikolai Greenstone and Triassic Chitistone Limestone; they are marked by copper-stained zones along the contact of the greenstone and limestone (MacKevett, 1976). Samples of vein material contained as much as 10 parts per million (ppm) silver, more than 20,000 ppm copper, 15,000 ppm lead, and 10,000 ppm zinc (MacKevett and Smith, 1968, samples 50-52). Surface pits and cuts probably explored these prospects. Copper-bearing mineralization in the Triassic Nikolai Greenstone and Chitistone Limestone is probably Cretaceous in age (MacKevett and others, 1997) but the presence of other base metals in these deposits indicates they could be younger.

Alteration:

Oxidation.

Age of mineralization:

Cretaceous or Tertiary? Copper-bearing mineralization in the Triassic Nikolai Greenstone and Chitistone Limestone is probably Cretaceous in age (MacKevett and others, 1997) but the presence of other base metals in these deposits indicates they could be

younger.

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface pits and cuts probably explored these prospects.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Prospect

ARDF no.: MC164

Latitude: 61.3747 **Quadrangle:** MC B-4

Longitude: 142.4321

Location description and accuracy:

This prospect is at the head of Dan Creek (MacKevett and Smith, 1972). It is at an elevation of about 4,000 feet, 5,100 feet west-northwest of Joshua Green Peak, and 4,000 feet east-southeast of Nikolai Butte. The site is in the SW1/4 of section 6, T. 6 S., R. 17 E. of the Copper River Meridian. This is locality 54 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Ag, Cu

Other:

Ore minerals: Chalcocite, covellite, malachite, pyrrhotite

Gangue minerals:

Geologic description:

The deposit at this prospect consists of scattered veins up to 5 centimeters wide that contain chalcocite, pyrrhotite, covellite and malachite along joints in Triassic Nikolai Greenstone (MacKevett, 1976). A sample of the veins contained 30 parts per million (ppm) silver and more than 20,000 ppm copper (MacKevett and Smith, 1968, sample 53). The deposit was explored by a 15-foot-long adit (MacKevett, 1976). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:
Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
The deposit was explored with a 15-foot-long adit (MacKevett, 1976).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (southwest flank of Joshua Green Peak)

Site type: Occurrence

ARDF no.: MC165

Latitude: 61.3678 **Quadrangle:** MC B-4

Longitude: 142.4103

Location description and accuracy:

This occurrence is on the southwest flank of Joshua Green Peak. It is at an elevation of about 6,300 feet, 2,200 feet southwest of the peak in the NW1/4 of section 8, T. 6 S., R. 17 E. of the Copper River Meridian. This is locality 53 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Sb

Other:

Ore minerals: Stibnite(?)

Gangue minerals:

Geologic description:

This occurrence consists of an intensely iron-stained altered fault zone cuts Triassic Chitistone Limestone and siliciclastic rocks of the Triassic to Lower Jurassic(?) McCarthy Formation (MacKevett, 1970 [B 1333]; MacKevett and Smith, 1972; MacKevett, 1976). A sample from the altered zone contained 1,500 parts per million antimony (MacKevett and Smith, 1968).

Alteration:

Oxidation; iron-staining marks the altered zone.

Age of mineralization:

Jurassic or younger based on the age of the host rocks.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1970 (B 1333); MacKevett and Smith, 1972; MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of Twaharpies Glacier)

Site type: Occurrence

ARDF no.: MC166

Latitude: 61.3621 **Quadrangle:** MC B-4

Longitude: 142.2066

Location description and accuracy:
This occurrence is on a ridge south of Twaharpies Glacier. It is at an elevation of about 6,300 feet, 500 feet north-northwest of elevation 6745 in the SW1/4 of section 9, T. 6 S., R. 18 E. of the Copper River Meridian. This is locality 48 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other: Ag, As

Ore minerals:

Gangue minerals:

Geologic description:
This occurrence consists of Triassic Nikolai Greenstone that is mineralized adjacent to a 15-meter-wide altered fault zone (MacKevett, and Smith, 1968, 1972; MacKevett, 1976). A sample of the mineralized rock contained 2 parts per million (ppm) silver, 7,000 ppm arsenic, and 15,000 ppm copper.

Alteration:

Age of mineralization:

Deposit model:
Vein and coatings

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Hancock Pass)

Site type: Occurrence

ARDF no.: MC167

Latitude: 61.3610 **Quadrangle:** MC B-4

Longitude: 142.4174

Location description and accuracy:

This prospect is on the north side of Hancock Pass. It is at an elevation of about 4,400 feet, 5,000 feet south-southwest of Joshua Green Peak, in the SW1/4 of section 8, T. 6 S., R. 17 E. of the Copper River Meridian. This is locality 52 of MacKevett (1976); the location is probably accurate to within a few hundred feet.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite(?)

Gangue minerals:

Geologic description:

The deposit at this prospect consists of minor copper-staining (malachite?) in Triassic Chitistone Limestone. It was explored by a now-caved shaft. (MacKevett and Smith, 1972; MacKevett, 1976). Copper mineralization is widespread in the Triassic Nikolai Greenstone and Triassic Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is widespread in the Triassic Nikolai Greenstone and Triassic Chitistone Limestone. It is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:
There is a caved exploration shaft near this deposit.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1972; MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of Twaharpies Glacier)

Site type: Occurrence

ARDF no.: MC168

Latitude: 61.3490 **Quadrangle:** MC B-4

Longitude: 142.1628

Location description and accuracy:

This occurrence is on a ridge crest south of Twaharpies Glacier (MacKevett and Smith, 1972). It is at an elevation of about 6,950 feet, 600 feet south of elevation 7080 and 500 feet north of the center of section 15, T. 6 S., R. 18 E. of the Copper River Meridian. This is locality 47 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other: Ag

Ore minerals:

Gangue minerals: Azurite, malachite

Geologic description:

This occurrence consists of azurite and malachite in a narrow shear zone that cuts Permian sedimentary rocks (MacKevett and Smith, 1968, 1972; MacKevett, 1976). A sample of the mineralization contained 2 parts per million (ppm) silver and 20,000 ppm copper.

Alteration:

Oxidation.

Age of mineralization:

Permian or younger based on the age of the host rocks.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Copper Creek; Rader Gulch; Seattle Gulch; Idaho Gulch

Site type: Mine

ARDF no.: MC169

Latitude: 61.3454 **Quadrangle:** MC B-4

Longitude: 142.4278

Location description and accuracy:

Copper Creek is a headwater tributary to Dan Creek (MC141). MacKevett (1976) shows placer gold mining along about 3 miles of Copper Creek and on three small south tributaries: Idaho Gulch, Rader Gulch, and Seattle Gulch. The coordinates are at the mouth of Rader Gulch on Copper Creek. This is locality 49 of MacKevett (1976); the location is accurate. Cobb and MacKevett (1980) included this mine under the name 'Copper Cr.'.

Commodities:

Main: Au

Other: Cu

Ore minerals: Gold, native copper

Gangue minerals:

Geologic description:

MacKevett (1976) shows placer gold mining along about 3 miles of Copper Creek and on three small south tributaries, Idaho Gulch, Rader Gulch, and Seattle Gulch. The placer deposits are in thin, bedrock-derived gravels; older surficial deposits have been stripped off by glaciation, and bench deposits are lacking in the drainage (Moffit and Capps, 1911; MacKevett, 1976). Copper Creek follows a fault contact between Triassic limestone and greenstone to the north and younger Mesozoic sedimentary rocks intruded by Tertiary hypabyssal rocks to the south (MacKevett and Smith, 1972). The gold in the placer deposits was apparently derived from areas south of the creek, but the native copper that was also recovered was most likely derived from Triassic Nikolai Greenstone and Chitistone Limestone to the north. Mining was in surface cuts and early efforts were by hand (Moffit and Capps, 1911). Copper Creek, along with Dan Creek (MC141), were major contributors to the 143,500 ounces of gold that were produced in the Nizina district (MacKevett, 1976).

Alteration:

Age of mineralization:

Quaternary.

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

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

Production Status: Yes: small

Site Status: Inactive

Workings/exploration:
Mining was in surface cuts and early efforts were by hand (Moffit and Capps, 1911).

Production notes:
Copper Creek, along with Dan Creek (MC141), were major contributors to the 143,500 ounces of gold that were produced in the Nizina district (MacKevett, 1976).

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Capps, 1911; MacKevett and Smith, 1972; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit and Capps, 1911

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of upper Eagle Creek)

Site type: Occurrence

ARDF no.: MC170

Latitude: 61.3416 **Quadrangle:** MC B-4

Longitude: 142.3314

Location description and accuracy:
This occurrence is on the ridge north of upper Eagle Creek. It is at an elevation of about 7,000 feet, 2,500 feet west-southwest of elevation 7415 near the southeast corner of section 15, T. 6 S., R. 17 E. of the Copper River Meridian. This is locality 50 of MacKevett (1976); the location is accurate to within a few hundred feet.

Commodities:

Main: Sb

Other: As, Au, W

Ore minerals: Stibnite

Gangue minerals: Calcite, quartz

Geologic description:
This occurrence consists of a series of stibnite-bearing quartz-calcite veins up to 25 centimeters thick that cut Triassic Nizina Limestone (MacKevett and Smith, 1972; MacKevett, 1976). Samples from this occurrence contain up to 1.2 parts per million (ppm) gold, 700 ppm arsenic, more than 10,000 ppm antimony, and 7,000 ppm tungsten (MacKevett and Smith, 1968, samples 62, 63, 65, and 66). The host rocks are Triassic limestone but other gold-bearing veins in the area (such as MC173) are Tertiary.

Alteration:

Age of mineralization:
Tertiary? The host rocks are Triassic but other gold-bearing veins in the area (such as MC173) are Tertiary.

Deposit model:
Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of upper Canyon Creek)

Site type: Occurrence

ARDF no.: MC171

Latitude: 61.3369 **Quadrangle:** MC B-4

Longitude: 142.1753

Location description and accuracy:

This occurrence is on the ridge crest between Twaharpies Glacier and Canyon Creek. It is at elevation 7470 in the NW1/4 of section 22, T. 6 S., R 18 E. of the Copper River Meridian. This is locality 46 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Cu

Other: Ag, As

Ore minerals: Chalcocite, malachite

Gangue minerals:

Geologic description:

This occurrence consists of a 6-foot-wide fault zone that contains narrow veins with chalcocite and malachite (MacKevett and Smith, 1968; MacKevett, 1976). A sample of the mineralization contained up to 7 parts per million (ppm) silver, 1,000 ppm arsenic, and more than 20,000 ppm copper. The fault zone cuts Triassic Nikolai Greenstone (MacKevett and Smith, 1972). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Oxidation.

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Sun and Moon Groups

Site type: Prospect

ARDF no.: MC172

Latitude: 61.3338 **Quadrangle:** MC B-4

Longitude: 142.3602

Location description and accuracy:

This prospect is located on or near Eagle Creek. The site is on Eagle Creek at an elevation of about 4,300 feet, 2,500 feet southeast of elevation 4740. It is in the SE1/4 of section 21, T. 6 S., R. 17 E. of the Copper River Meridian. This is National Park service locality WRST-226 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main:

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a mineral prospect but no other information is given. Exposed bedrock on the south side of Eagle Creek is Cretaceous sedimentary rocks locally intruded by Tertiary felsic dikes (MacKevett and Smith, 1972).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1972.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Taylor

Site type: Prospect

ARDF no.: MC173

Latitude: 61.3187 **Quadrangle:** MC B-4

Longitude: 142.4922

Location description and accuracy:

This prospect is south of Rex Creek. It is at an elevation of about 4,700 feet , 4,500 feet north-northwest of Mount Holmes in the SW1/4 of section 26, T. 6 S., R. 16 E. of the Copper River Meridian. This is locality 55 of MacKevett (1976) and it is accurately located. The prospect is shown on the McCarthy B-4 topographic map (1994 edition).

Commodities:

Main: Au, Cu

Other: Ag, Bi

Ore minerals: Chalcopyrite(?), native gold(?), pyrite

Gangue minerals: Quartz

Geologic description:

The deposit at this prospect is at the contact of a Tertiary felsic pluton and hornfels (MacKevett and Smith, 1972; MacKevett, 1976). Irregular sulfide-bearing pods occur along the contact; thin quartz veins cut the pluton and the hornfels; and the host rocks are altered. Samples contain up to 5 parts per million (ppm) silver, 15.4 ppm gold, 50 ppm bismuth, and 2,000 ppm copper (MacKevett and Smith, 1968). The Tertiary pluton contains disseminated pyrite and it intrudes Cretaceous sedimentary rocks (MacKevett and Smith, 1972; MacKevett, 1976). This prospect has probably been explored by small surface pits and trenches.

Alteration:

The type of alteration is not specified.

Age of mineralization:

Tertiary; the mineralization is partly hosted by a Tertiary pluton.

Deposit model:

Vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
This prospect has probably been explored by small surface pits and trenches.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (northeast of Canyon Creek)

Site type: Occurrence

ARDF no.: MC174

Latitude: 61.3122 **Quadrangle:** MC B-4

Longitude: 142.1646

Location description and accuracy:
This occurrence is on the west valley wall of an unnamed north tributary to Canyon Creek. It is at an elevation of about 5,200 feet, about 2,600 feet north-northwest of the center of section 34, T. 6 S., R. 18 E. of the Copper River Meridian. This is locality 45 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
This occurrence consists of irregular altered zones in upper Paleozoic volcaniclastic rocks (MacKevett and Smith, 1968; MacKevett, 1976). A sample of the altered rock contained 5.2 parts per million gold.

Alteration:

Age of mineralization:
Upper Paleozoic or younger based on the age of the host rocks.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett, 1976.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (northeast of Canyon Creek)

Site type: Occurrence

ARDF no.: MC175

Latitude: 61.3121 **Quadrangle:** MC B-4

Longitude: 142.1861

Location description and accuracy:

This prospect is near the head of a small unnamed east tributary to Canyon Creek. The site is on the tributary at an elevation of about 5,700 feet, 1,500 feet west of elevation 6705 in the NE1/4 of section 33, T. 6 S., R. 18 E. of the Copper River Meridian. This is National Park Service locality WRST-235 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Mo

Other:

Ore minerals: Molybdenite(?)

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a molybdenum prospect where 3 claims were once staked. Bedrock in this area is mostly Triassic Nikolai Greenstone (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (northeast of Canyon Creek)

Site type: Occurrence

ARDF no.: MC176

Latitude: 61.3043 **Quadrangle:** MC B-4

Longitude: 142.1591

Location description and accuracy:

This occurrence is on the east side of an unnamed east tributary to Canyon Creek. It is at an elevation of about 5,000 feet, 3,500 feet northwest of elevation 7015, about 800 feet northeast of the center of section 34, T. 6 S., R. 18 E of the Copper River Meridian. This is National Park Service locality WRST-236 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a copper occurrence. The bedrock in the area is Triassic Nikolai Greenstone (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC177

Latitude: 61.2824 **Quadrangle:** MC B-4

Longitude: 142.1830

Location description and accuracy:
This occurrence is on Canyon Creek. It is at an elevation of about 3,900 feet, in the NE1/4 of section 9, T. 7 S., R. 18 E. of the Copper River Meridian. This is National Park Service locality WRST-242 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold occurrence. Bedrock in Canyon Creek is mostly Triassic Nikolai Greenstone (MacKevett, 1978).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west side of Canyon Creek)

Site type: Occurrence

ARDF no.: MC178

Latitude: 61.2728 **Quadrangle:** MC B-4

Longitude: 142.1874

Location description and accuracy:

This occurrence is on the west valley wall of Canyon Creek. It is at an elevation of about 4,000 feet, 6,000 feet northeast of elevation 6075 and 800 feet from Canyon Creek. The site is in the SE1/4 of section 9, T. 7 S., R. 18 E. of the Copper River Meridian. This is locality 36 of MacKevett (1976); the location is accurate to within about 100 feet.

Commodities:

Main: Ag, Au, Cu

Other:

Ore minerals: Azurite(?), malachite(?)

Gangue minerals:

Geologic description:

This occurrence consists of secondary copper minerals (malachite and azurite?) in a 1- to 2-foot-thick mineralized zone that cuts Triassic Nikolai Greenstone (MacKevett and Smith, 1968, 1972; MacKevett, 1976). The mineralized zone is part of a 15-foot-wide fault zone (MacKevett and Smith, 1968, p. 3). A sample of the mineralization contained 50 parts per million (ppm) silver, 1.3 ppm gold, and more than 20,000 ppm copper (MacKevett and Smith, 1968, sample 108). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett and Smith, 1968; MacKevett and Smith, 1972; MacKevett, 1976; MacKevett and others, 1997.

Primary reference: MacKevett and Smith, 1968

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Mission

Site type: Prospect

ARDF no.: MC179

Latitude: 61.3738 **Quadrangle:** MC B-3

Longitude: 142.0843

Location description and accuracy:
This prospect is on the north side of upper Twaharpies Glacier. It is at an elevation of about 6,000 feet, 2,000 feet north of the glacier and 7,000 feet southwest of peak 8410. The site is in the SW1/4 of section 6, T. 6 S., R. 19 E. of the Copper River Meridian. This is National Park Service locality WRST-262 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a gold prospect. Bedrock in the area is mostly upper Paleozoic volcanic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west of upper Hawkins Glacier)

Site type: Prospect

ARDF no.: MC180

Latitude: 61.3262 **Quadrangle:** MC B-3

Longitude: 141.9857

Location description and accuracy:
This prospect is on the steep southwest flank of peak 12470. It is at an elevation of about 9,000 feet, 4,000 feet southwest of peak 12470, and 2,500 feet south of the center of section 22, T. 6 S., R. 19 E. of the Copper river Meridian. This is locality 44 of MacKevett (1976); the location is probably accurate to within a several thousand feet.

Commodities:

Main: Mo

Other:

Ore minerals: Molybdenite

Gangue minerals: Quartz

Geologic description:
The deposit at this prospect consists of molybdenite-bearing quartz veins that cut Tertiary granodiorite (Smith, 1942; MacKevett, 1976). The veins are up to 3 feet thick but generally are less than one foot thick.

Alteration:

Age of mineralization:
The age of the host granodiorite is Tertiary.

Deposit model:
Porphyry Mo, low F? (Cox and Singer, 1986; model 21b)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
21b?

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Smith, 1942; MacKevett, 1976.

Primary reference: Smith, 1942

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west of upper Hawkins Glacier)

Site type: Occurrence

ARDF no.: MC181

Latitude: 61.3194 **Quadrangle:** MC B-3

Longitude: 141.8891

Location description and accuracy:
This occurrence is on the west valley wall of upper Hawkins Glacier. It is at an elevation of about 5,500 feet, 5,000 feet southeast of peak 11040 in the NE1/4 of section 30, T. 6 S., R. 20 E. of the Copper River Meridian. This is locality 43 of MacKevett (1976); the location is probably accurate to within 500 feet.

Commodities:

Main: Ag, Mo

Other: Bi

Ore minerals: Molybdenite(?)

Gangue minerals:

Geologic description:
This occurrence is in altered Tertiary granodiorite. A sample contained 7 parts per million (ppm) silver, 200 ppm bismuth, and 500 ppm molybdenum (MacKevett, 1976).

Alteration:

Age of mineralization:
Tertiary based on the age of the granodiorite host rock.

Deposit model:
Porphyry Mo, low F? (Cox and Singer, 1986; model 21b)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
21b?

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (west of Twelvemile Canyon)

Site type: Occurrence

ARDF no.: MC182

Latitude: 61.0271 **Quadrangle:** MC A-8

Longitude: 143.9597

Location description and accuracy:

This occurrence is in the headwaters of an unnamed tributary to the North Fork of the Bremner River. It is at an elevation of about 4,500 feet, 3,500 feet northeast of VABM Sob on peak 6341. The occurrence is in the SE1/4 of section 3, T. 10 S., R. 8 E. of the Copper River Meridian. This is locality 12 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Au?

Other:

Ore minerals: Gold(?)

Gangue minerals:

Geologic description:

This occurrence consists of thin quartz veins that cut Cretaceous Valdez Group flysch. A sample of the quartz veins contained 7 parts per million silver and some are probably gold-bearing (MacKevett, 1976). Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:

Silicification.

Age of mineralization:

Early Tertiary. Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

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:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; Goldfarb and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Amy Creek #2

Site type: Prospect

ARDF no.: MC183

Latitude: 61.0049 **Quadrangle:** MC A-8

Longitude: 143.6355

Location description and accuracy:

This prospect is on lower Amy Creek, a north tributary to the North Fork Bremner River. It is at an elevation of about 2,200 feet in the NE 1/4 of section 16, T. 10 S., R. 10 E. of the Copper River Meridian. This is National Park Service locality WRST-192 (unpublished data); the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a copper lode prospect. Bedrock in this area is part of the Cretaceous Valdez Group flysch, which locally contains intercalated metavolcanic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:

Cretaceous or younger based on the age of the rocks in the vicinity.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (northeast of benchmark Verde)

Site type: Occurrence

ARDF no.: MC184

Latitude: 61.2417 **Quadrangle:** MC A-7

Longitude: 143.4093

Location description and accuracy:

This occurrence is in the headwaters of an unnamed north tributary to the Klu River. It is at an elevation of about 5,400 feet, 1.7 miles northeast of triangulation station Verde (elevation 6233) and 6,500 feet northwest of elevation 5433. The site is in the SE 1/4 of section 22, T. 7 S., R. 11 E. of the Copper River Meridian. This is locality 42 of MacKevett (1976); the location is probably accurate to within 1,000 feet.

Commodities:

Main: Cr, Ni

Other: Co

Ore minerals: Chromite(?)

Gangue minerals:

Geologic description:

This occurrence consists of a serpentinized ultramafic body that is in fault contact with gabbro (MacKevett, 1976). A sample of the serpentinite contained greater than 10 percent magnesium, 100 parts per million (ppm) cobalt, 3,000 ppm chromium, and 2,000 ppm nickel. The mafic and ultramafic rocks are emplaced in Upper Paleozoic metamorphic rocks (MacKevett, 1978).

Alteration:

Serpentinization.

Age of mineralization:

Late Paleozoic or younger based on the age of the metamorphic country rocks.

Deposit model:

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

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

8a?

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Upper Hanagita Lakes)

Site type: Occurrence

ARDF no.: MC185

Latitude: 61.2225 **Quadrangle:** MC A-7

Longitude: 143.4059

Location description and accuracy:

This occurrence is in the headwaters of an unnamed north tributary to the Klu River. It is at an elevation of about 4,600 feet, 8,500 feet east-southeast of benchmark Verde (elevation 6233). The site is in the NE1/4 of section 34, T. 7 S., R. 11 E. of the Copper River Meridian. This is locality 41 of MacKevett (1976). It is probably accurate to within about 1,000 feet.

Commodities:

Main: Cr, Ni

Other:

Ore minerals: Chromite(?)

Gangue minerals: Serpentine

Geologic description:

Small dikelike bodies of largely serpentinized ultramafic rock are emplaced in Upper Paleozoic metamorphic rocks. A sample contained , 150 parts per million (ppm) cobalt, 3,000 ppm chromium, 3,000 ppm nickel, and more than 10 percent magnesium (MacKevett, 1976).

Alteration:

Serpentinization.

Age of mineralization:

Late Paleozoic or younger based on the age of the metamorphic host rocks.

Deposit model:

Podiform chromite (Cox and Singer, 1986, model 8a)

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

8a

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north of Klu River)

Site type: Prospect

ARDF no.: MC186

Latitude: 61.2125 **Quadrangle:** MC A-7

Longitude: 143.3022

Location description and accuracy:

This prospect is on a ridge 2.7 miles north-northeast of the confluence of Klu River and Gold Creek. The site is at an elevation of about 5,500 feet, 4,000 feet south-southwest of peak 6683 in the SW1/4 of section 32, T. 7 S., R. 12 E. of the Copper River Meridian. This is National Park Service locality WRST-191 (unpublished data). The latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Cu

Other:

Ore minerals:

Gangue minerals:

Geologic description:

An unpublished National Park Service map and accompanying database identify this locality as a copper prospect. The rocks in the area are Upper Paleozoic metamorphic rocks that are locally intruded by Jurassic plutons (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

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

Production Status:

Site Status:

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1978.

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Monahan Creek

Site type: Prospect

ARDF no.: MC187

Latitude: 61.0801 **Quadrangle:** MC A-7

Longitude: 143.3223

Location description and accuracy:
This prospect is located on Monahan Creek. The site is at an elevation of 3,050 feet near the south boundary of section 17, T. 9 S., R. 12 E. of the Copper River Meridian. It is approximately located, perhaps within a few miles. This is National Park Service locality WRST-197 (unpublished data) and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a gold prospect. Both placer and lode gold deposits are known in the area (for example MC193 and MC195). These lode deposits are gold-bearing quartz veins in metaflysch of the Cretaceous Valdez Group.

Alteration:

Age of mineralization:
Quaternary or Early Tertiary based on the age of placer and lode gold deposits in the area.

Deposit model:
Placer Au or low-sulfide Au-quartz vein (Cox and Singer, 1986; models 39a and 36a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
39a or 36a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC188

Latitude: 61.0699 **Quadrangle:** MC A-7

Longitude: 143.2566

Location description and accuracy:

This occurrence is on a ridge crest east of Monahan Creek. It is near elevation 6102 in the center of the S1/2 of section 22, T. 9 S., R. 12 E. of the Copper River Meridian. This is locality 22 of MacKevett (1976). The location is probably accurate to within 1,000 feet.

Commodities:

Main: Au?

Other:

Ore minerals: Gold(?)

Gangue minerals: Quartz

Geologic description:

This occurrence consists of numerous thin, sulfide-bearing quartz veins that cut Cretaceous Valdez Group metaflysch (MacKevett, 1976). The veins are assumed to be gold-bearing, like many other similar deposits in the general area (for example: MC189 through MC194). Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:

Silicification.

Age of mineralization:

Early Tertiary. Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

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:
Only limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; Goldfarb and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Grand Prize; Bremner Mining Company

Site type: Mine

ARDF no.: MC189

Latitude: 61.0569 **Quadrangle:** MC A-7

Longitude: 143.4254

Location description and accuracy:

This mine is northwest of the head of Golconda Creek. It is at an elevation of about 5,700 feet, upslope from the Lucky Girl mine (MC190) and 5,000 feet northwest of the pass between Golconda and Monahan creeks. The mine is about 2,000 feet east-southeast of the center of section 27, T. 9 S., R. 11 E. of the Copper River Meridian. This is locality 24 of MacKevett (1976) and it is probably accurate to within 1,000 feet.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

The deposit at this mine consists of gold in gouge and in comminuted quartz vein material along the hanging wall of an east-dipping felsic dike (Moffit, 1937; MacKevett, 1976). The dike intrudes metasflysch of the Cretaceous Valdez Group (MacKevett, 1978). The mine was developed by an adit, crosscut, and drifts (Moffit, 1937). Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:

Silicification.

Age of mineralization:

Early Tertiary. Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Deposit model:

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

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

Production Status: Yes: small

Site Status: Inactive

Workings/exploration:
The mine was developed by an adit, crosscut, and drifts (Moffit, 1937).

Production notes:
Probably some minor gold production.

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1937; MacKevett, 1976; MacKevett, 1978; Goldfarb and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Lucky Girl; Bremner Mining Company

Site type: Mine

ARDF no.: MC190

Latitude: 61.0517 **Quadrangle:** MC A-7

Longitude: 143.4198

Location description and accuracy:

This mine is at the head of Golconda Creek. It is at an elevation of about 4,500 feet, 3,500 feet west of the pass between Golconda and Monahan creeks. It is accurately located near the southwest corner of section 26, T. 9 S., R. 11 E. of the Copper River Meridian. It is misidentified as the Yellowband mine on the McCarthy A-7 quadrangle map (1959 edition). This is locality 23 of MacKevett (1976).

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

The deposit at this mine consists of sparsely distributed gold in a series of subparallel quartz veins from a few centimeters to 1 meter thick (MacKevett, 1976). The veins cut metaflysch of the Cretaceous Valdez Group (MacKevett, 1978). The metasedimentary rocks are intruded by felsic dikes and cut by a north-trending system of vertical faults. The mine, which did not produce much gold, was developed by two adits and about 2,000 feet of drifts, crosscuts, and raises. There was a 50-ton-per-day mill, a hydroelectric power system, and other surface facilities (Moffit, 1937). Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:

Silicification.

Age of mineralization:

Early Tertiary. Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Deposit model:

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

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

Production Status: Yes: small

Site Status: Inactive

Workings/exploration:
The mine, which did not produce much gold, was developed by two adits, and about 2,000 feet of drifts, crosscuts, and raises. There was a 50-ton-per-day mill, a hydroelectric power system, and other surface facilities (Moffit, 1937).

Production notes:
Minor production.

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1937; MacKevett, 1976; MacKevett, 1978; Goldfarb and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): La Tendre

Site type: Prospect

ARDF no.: MC191

Latitude: 61.0363 **Quadrangle:** MC A-7

Longitude: 143.4000

Location description and accuracy:

This prospect is on the west side of the peak between upper Golconda Creek and the headwater cirque of Pocket Creek. It is at an elevation of about 6,500 feet, about 3,700 feet northwest of peak 7020. The site is in the NE1/4 of section 2, T. 10 S., R. 11 E. of the Copper River Meridian. This is locality 11 of MacKevett (1976) and it is probably accurate to within 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Le Tendre'.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

Gold-bearing quartz is reported to occur in a brecciated fault zone that cuts metaflysch of the Cretaceous Valdez Group (MacKevett, 1976). Some rich gold-bearing quartz specimens were obtained from this deposit (Moffit, 1937). Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:

Silicification.

Age of mineralization:

Early Tertiary. Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Deposit model:

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

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

36a

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
The deposit is extensively covered by surface rubble (MacKevett, 1976).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1937; MacKevett, 1976; Cobb and MacKevett, 1980; Goldfarb and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Chick Nelson

Site type: Prospect

ARDF no.: MC192

Latitude: 61.0360 **Quadrangle:** MC A-7

Longitude: 143.3857

Location description and accuracy:

This prospect is on west valley wall of the small hanging glacier above the head of Pocket Creek, a west tributary to Monahan Creek. It is at an elevation of about 6,300 feet, 2,000 feet north of peak 7020. The site is near the northwest corner of section 1, T. 10 S., R. 11 E. of the Copper River Meridian. This is locality 10 of MacKevett (1976); the location is probably accurate to within 1,000 feet. Cobb and MacKevett (1980) included this prospect under the name 'Nelson'.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:

At this prospect, five gold-bearing quartz veins to 16 inches thick cut Cretaceous Valdez Group metaflysch. The veins carry spotty gold values and are associated with three north-trending felsic dikes (Moffit, 1937). The deposits are on a steep slope but some trenches or prospecting pits are probably present. Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:

Silicification.

Age of mineralization:

Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

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:
The deposits are on a steep slope but some trenches or prospecting pits are probably present.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1937; MacKevett, 1976; Cobb and MacKevett, 1980; Goldfarb and others, 1997.

Primary reference: Moffit, 1937

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Yellowband

Site type: Mine

ARDF no.: MC193

Latitude: 61.0283 **Quadrangle:** MC A-7

Longitude: 143.4010

Location description and accuracy:

The Yellowband mine is on the north side of a cirque at the head of an unnamed east tributary to Golconda Creek. It is at an elevation of about 5,200 feet, 7,000 feet north-northeast of peak 6635 and 6,000 feet east-northeast of the Bremner landing strip. This is locality 9 of MacKevett (1976); the location is probably accurate to within 1,000 feet. Cobb and MacKevett (1980) included this mine under the name 'Yellow Band'. The location of the Yellowband mine on the McCarthy A-7 topographic map (1959 edition) is incorrect.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Calcite, quartz

Geologic description:

The deposit at this mine consists of gold-bearing quartz veins generally less than 25 centimeters thick that are localized along steeply dipping felsic dikes (MacKevett (1976). Three open cuts in 1935 showed gold along fractures and in quartz-calcite veins and replacements along the faulted and brecciated hanging wall of a steeply-dipping felsic dike (Moffit, 1937). The dike is 12 to 15 feet thick, strikes N 5 W, and dips east. The deposits were developed by several hundred meters of underground workings and produced about 750 ounces of gold (Smith, 1942; MacKevett, 1976]). The veins and dikes cut Cretaceous Valdez Group metaflysch (MacKevett, 1978). Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:

Silicification.

Age of mineralization:

Early Tertiary. Gold-bearing quartz veins in the Valdez Group are generally Early Ter-

tiary in age (Goldfarb and others, 1997).

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

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

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Open cuts explored the deposits in 1935, and by 1940 there were several hundred meters of underground workings (Smith, 1942; MacKevett, 1976).

Production notes:
Total production was about 750 ounces of gold (MacKevett, 1976).

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1937; Smith, 1942; MacKevett, 1976; MacKevett, 1978; Cobb and MacKevett, 1980; Goldfarb and others, 1997.

Primary reference: Moffit, 1937

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (northeast of Standard Creek)

Site type: Prospect

ARDF no.: MC194

Latitude: 61.0076 **Quadrangle:** MC A-7

Longitude: 143.4182

Location description and accuracy:
This prospect is on the southwest flank of peak 6635. It is at an elevation of about 5,800 feet, 6,500 feet east of the mouth of Standard Creek near the northwest corner of section 14, T. 10 S., R. 11 E. of the Copper River Meridian. This is locality 7 of MacKevett (1976); the location is probably accurate to within 1,000 feet.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals: Quartz

Geologic description:
Minor surface workings were noted at this prospect (MacKevett, 1976). The deposit that was prospected is inferred to be gold-bearing quartz vein(s) in the Cretaceous Valdez Group metaflysch similar to other lode gold deposits in the area, such as MC190 and MC193 (MacKevett, 1976, 1978). Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

Alteration:
Silicification.

Age of mineralization:
Early Tertiary. Gold-bearing quartz veins in the Valdez Group are generally Early Tertiary in age (Goldfarb and others, 1997).

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:
Some small surface trenches or prospect pits are present.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978; Goldfarb and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Golconda Creek

Site type: Mine

ARDF no.: MC195

Latitude: 61.0069 **Quadrangle:** MC A-7

Longitude: 143.4555

Location description and accuracy:

Golconda Creek is a north tributary to the North Fork of the Bremner River. Placer gold has been recovered at least locally on Golconda Creek for two miles downstream from an elevation of about 3,500 feet to an elevation of about 2,900 feet. The coordinates are at the confluence of Golconda and Standard Creeks in the NE1/4 of section 16, T. 10 S., R. 11 E. of the Copper River Meridian. This is locality 8 of MacKevett (1976); it is accurately located. Cobb and MacKevett (1980) included this mine under the name 'Golconda Cr.'.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer gold has been recovered at least locally on Golconda Creek for two miles. (MacKevett, 1976). Gold was discovered in 1901 and small-scale surface mining including hydraulic operations, recovered a few thousand ounces of gold during the next 10 to 15 years (Cobb and MacKevett, 1980). The gold was rough and partly attached to quartz; gold nuggets up to about 2.5 ounces in size were recovered (Moffit, 1912; Moffit 1914). The gold was in gravels up to 8 feet thick. Golconda Creek reworks bench deposits of gold-bearing glaciofluvial gravels. Bedrock in the area is metaflysch of the Cretaceous Valdez Group that is locally intruded by felsic dikes (MacKevett (1978). Slate bedrock was common in the mining operations.

Alteration:

Age of mineralization:

Quaternary.

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

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

Production Status: Yes; small

Site Status: Inactive

Workings/exploration:
Gold was discovered in 1901 and small-scale surface mining, including hydraulic operations, recovered a few thousand ounces during the next 10 to 15 years (Cobb and MacKevett, 1980).

Production notes:
A total of 2,000 to 3,000 ounces of gold are estimated to have been produced from Golconda Creek (Cobb and MacKevett, 1980).

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1912; Moffit, 1914; MacKevett, 1976; MacKevett, 1978; Cobb and MacKevett, 1980.

Primary reference: Moffit, 1914

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (near Chakina River-West Fork junction)

Site type: Occurrence

ARDF no.: MC196

Latitude: 61.1148 **Quadrangle:** MC A-6

Longitude: 143.1409

Location description and accuracy:

This occurrence is on the ridge between Chakina River and the West Fork of the Chakina River. It is on the west side of a saddle whose elevation is about 4,655 feet , almost in the center of section 5, T. 9 S., R. 13 E. of the Copper River Meridian. This is locality 21 of MacKevett (1976); the location is probably accurate to within about 1,000 feet.

Commodities:

Main: Cr, Ni

Other:

Ore minerals: Chromite(?)

Gangue minerals:

Geologic description:

This occurrence consists of a sheared and serpentinized alpine-type ultramafic body, about 1 mile long, that is localized along the Border Ranges fault (MacKevett, 1976, 1978). The ultramafic is assumed to be similar to the serpentinized body at MC197, samples of which contained 10 percent magnesium, 150 parts per million (ppm) cobalt, 3,000 ppm chromium, and 2,000 ppm nickel (MacKevett, 1976). The ultramafic body is in contact with upper Paleozoic metamorphic rocks (MacKevett, 1978).

Alteration:

Serpentinization.

Age of mineralization:

Deposit model:

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

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

8a?

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east of Chakina River)

Site type: Occurrence

ARDF no.: MC197

Latitude: 61.0782 **Quadrangle:** MC A-6

Longitude: 142.9973

Location description and accuracy:

This occurrence is on a ridge crest east of the Chakina River. It is at an elevation of about 5,800 feet, about 1,000 feet southeast of peak 6015 and about 3,000 feet northwest of peak 6165. The site is in the NW1/4 of section 19, T. 9 S., R. 14 E. of the Copper River Meridian. This is locality 20 of MacKevett (1976); it is probably accurate to within about 500 feet.

Commodities:

Main: Cr, Ni

Other: Co

Ore minerals: Chromite

Gangue minerals: Serpentine

Geologic description:

This occurrence consists of serpentinized ultramafic rocks with minor chromite and disseminated sulfide minerals. A sample contained 10 percent magnesium, 150 parts per million (ppm) cobalt, 3,000 ppm copper, and 2,000 ppm nickel (MacKevett, 1976). The host alpine-type ultramafic body which is about 1.5 mile long and 0.2 mile wide is within upper Paleozoic metamorphic rocks (MacKevett, 1978).

Alteration:

Sepentinization.

Age of mineralization:

Deposit model:

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

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

8a

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Young Creek; Calamity Gulch

Site type: Mine

ARDF no.: MC198

Latitude: 61.2266 **Quadrangle:** MC A-5

Longitude: 142.5289

Location description and accuracy:

Young Creek is an east tributary to the Nizina River and the main drainage on the north side of MacColl Ridge. Placer gold has been recovered from the creek from an elevation of 2,400 feet (McCarthy A-5 quadrangle) to 3,000 feet (McCarthy A-4 quadrangle). Small tributaries, especially Calamity Gulch, have also produced gold. The location used here is the confluence of Young Creek and Calamity Gulch in the northwest corner of section 34, T. 7 S., R. 16 E. of the Copper River Meridian. This is locality 37 of MacKevett (1976). Cobb and MacKevett (1980) included this mine under the name 'Young Cr.'. It is accurately located.

Commodities:

Main: Au

Other: Cu

Ore minerals: Copper, gold

Gangue minerals:

Geologic description:

Placer gold and some native copper nuggets have been recovered locally along Young Creek from an elevation of 2,400 feet in the McCarthy A-5 quadrangle to an elevation of 3,000 feet in the McCarthy A-4 quadrangle (MacKevett, 1976). Small tributaries, especially Calamity Gulch, also produced gold. Young Creek reworks glaciofluvial deposits and is incised into Cretaceous mudstone and siltstone (MacKevett, 1973). Prospecting occurred as early as 1909 and and there was intermittent small-scale surface mining or several years in the early 1900s (Moffit and Capps, 1911; Cobb and MacKevett, 1980).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

Placer Cu-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:
Prospecting occurred as early as 1909 and and there was intermittent small-scale surface mining or several years in the early 1900s (Moffit and Capps, 1911; Cobb and MacKevett, 1980).

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit and Capps, 1911; MacKevett, 1973; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit and Capps, 1911

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Horse Shoe Mine #2

Site type: Prospect

ARDF no.: MC199

Latitude: 61.1923 **Quadrangle:** MC A-4

Longitude: 142.2324

Location description and accuracy:
This placer gold prospect is at an elevation of about 2,600 feet on an unnamed west tributary to Canyon Creek. The headwater source of this tributary is Big Bend Lakes. The site is near the boundary between sections 7 and 8, T. 8 S., R. 18 E. of the Copper River Meridian. This is National Park Service locality WRST-243 and the latitude and longitude for this record were provided by the National Park Service.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
An unpublished National Park Service map and accompanying database identify this locality as a placer gold prospect.

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:

Primary reference: This record

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Canyon Creek

Site type: Prospect

ARDF no.: MC200

Latitude: 61.1342 **Quadrangle:** MC A-4

Longitude: 142.2266

Location description and accuracy:
This prospect is at the head of the alluvial fan at the mouth of Canyon Creek. It is at an elevation of about 1,600 feet, 5,000 feet northwest of elevation 1720 in the NW 1/4 of section 32, T. 8 S., R. 18 E. of the Copper River Meridian. This is locality 33 of MacKevett (1976). It was included by Cobb and MacKevett (1980) under the name 'Canyon Cr.'.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Placer gold is reported in this part of Canyon Creek (Moffit, 1916, p. 135; MacKevett, 1976).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Undetermined.

Site Status: Inactive

Workings/exploration:
Some limited prospecting prior to WWI.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Moffit, 1916; MacKevett, 1976; Cobb and MacKevett, 1980.

Primary reference: Moffit, 1916

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (northeast of mouth of McCurdy Creek)

Site type: Occurrence

ARDF no.: MC201

Latitude: 61.0847 **Quadrangle:** MC A-4

Longitude: 142.1652

Location description and accuracy:

This occurrence is on a small bedrock knob on the south bank of the Chitina River flood plain. It is at an elevation of about 1,600 feet, about 0.9 mile northeast of the mouth of McCurdy Creek near the center of the south 1/2 of section 14, T. 9 S., R. 18 E. of the Copper River Meridian. This is locality 18 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Mo

Other: Ag

Ore minerals:

Gangue minerals: Quartz

Geologic description:

This occurrence consists of a quartz vein in a fault in Permian marble. A sample contained 1 part per million silver and 70 parts per million molybdenum (MacKevett, 1976).

Alteration:

Silicification.

Age of mineralization:

Permian or younger based on the age of the marble host rock.

Deposit model:

Quartz vein

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south bank of Chitina River)

Site type: Occurrence

ARDF no.: MC202

Latitude: 61.0838 **Quadrangle:** MC A-4

Longitude: 142.3383

Location description and accuracy:
This occurrence is on the south bank of the Chitina River. It is at an elevation of about 1,400 feet, 800 feet south of the flood plain and 500 east of a small lake. The site is near the center of the SE1/4 of section 14, T. 9 S., R. 17 E. of the Copper River Meridian. This is locality 19 of MacKevett (1976); the location is accurate to within about 500 feet.

Commodities:

Main: Mo

Other:

Ore minerals:

Gangue minerals: Quartz

Geologic description:
This occurrence consists of quartz veins, 30 to 60 cm thick, in shear zones in Upper Paleozoic metamorphic rocks. A sample of vein material contained 0.5 ppm silver, 300 ppm arsenic, and 70 ppm molybdenum (MacKevett, 1976).

Alteration:
Silicification.

Age of mineralization:
Upper Paleozoic or younger based on metamorphic host rocks of the Skolai Group (MacKevett, 1978).

Deposit model:
Quartz veins

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC203

Latitude: 61.0281 **Quadrangle:** MC A-4

Longitude: 142.2421

Location description and accuracy:

This occurrence is in the headwaters of an unnamed tributary to Discovery Creek, a south tributary to the Chitina River. It is at an elevation of about 4,600 feet, 5,500 feet northeast of peak 6455 and 7,500 feet west-southwest of elevation 5816. The site is about 2,800 feet east-southeast of the center of section 5, T. 10 S., R. 18 E. of the Copper River Meridian. This is locality 6 of MacKevett (1976); it is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Au, Cu, Mo

Other:

Ore minerals: Chalcopyrite(?)

Gangue minerals: Quartz

Geologic description:

This occurrence consists of sulfide-bearing quartz veins up to 30 centimeters wide that cut Jurassic quartz monzonite of the Chitina Valley batholith (MacKevett, 1976, 1978). A sample of vein material contained 10 parts per million (ppm) silver, 0.2 ppm gold, 20,000 ppm copper, and 150 ppm molybdenum (MacKevett, 1976). K/Ar dates for the Chitina Valley batholith range from 138 to 146 +/- 4 Ma (MacKevett, 1978).

Alteration:

Silicification.

Age of mineralization:

Late Jurassic(?) based on K/Ar dates for the host Chitina Valley batholith which range from 138 to 146 +/- 4 Ma (MacKevett, 1978).

Deposit model:

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC204

Latitude: 61.0211 **Quadrangle:** MC A-4

Longitude: 142.2271

Location description and accuracy:

This occurrence is in the headwaters of Coffee Creek, a south tributary to the Chitina River. It is on the west side of a cirque valley at an elevation of about 5,200 feet, 6,000 feet southwest of elevation 5816. The occurrence is about 2,100 feet north of the center of section 9, T. 10 S., R. 18 E. of the Copper River Meridian. This is locality 5 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Au, Cu, Mo

Other:

Ore minerals: Chalcopyrite(?)

Gangue minerals:

Geologic description:

This occurrence consists of sulfide minerals in quartz veins to 15 centimeters wide and disseminated sulfides in Jurassic quartz diorite of the Chitina Valley batholith (MacKevett, 1976, 1978). A sample of selected quartz vein material contained 30 parts per million (ppm) silver, 2 ppm gold, 20,000 ppm copper, and 70 ppm molybdenum. K/Ar dates for the host Chitina Valley batholith range from 138 to 146 +/- 4 Ma (MacKevett, 1978).

Alteration:

Silicification.

Age of mineralization:

Late Jurassic(?) based on K/Ar dates for the host Chitina Valley batholith which range from 138 to 146 +/- 4 Ma (MacKevett, 1978).

Deposit model:

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Blue Star

Site type: Prospect

ARDF no.: MC205

Latitude: 61.1248 **Quadrangle:** MC A-3

Longitude: 141.8559

Location description and accuracy:
This prospect is on the north valley wall of lower Barnard Glacier. It is at an an elevation of about 2,500 feet, about 1,500 feet from the glacier,and 7,000 feet southwest of peak 7110. The prospect is in the SE 1/4 of section 32, T. 8 S., R. 20 E. of the Copper River Meridian. This is locality 29 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Pyrite, secondary copper minerals

Gangue minerals:

Geologic description:
The deposit at this prospect consists of schist that contains disseminated pyrite and copper staining (MacKevett, 1976). The schist is part of the submarine volcanogenic Station Creek Formation of Early Permian and Pennsylvanian age (MacKevett, 1978).

Alteration:
Oxidation.

Age of mineralization:
Pennsylvanian to Early Permian(?) based on the age of the host rocks of the Station Creek Formation (MacKevett, 1978).

Deposit model:
Kuroko massive sulfide? (Cox and Singer, 1986; model 28a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
28a?

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east bank of lower Goat Creek)

Site type: Occurrence

ARDF no.: MC206

Latitude: 61.0625 **Quadrangle:** MC A-3

Longitude: 142.1020

Location description and accuracy:

This occurrence is on the east bank of lower Goat Creek. It is at an elevation of about 1,700 feet, about 1,000 feet south-southeast of elevation 2420 in the NE1/4 of section 30, T. 9 S., R. 19 E. of the Copper River Meridian. This is locality 17 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Ag, Cu, Mo

Other:

Ore minerals:

Gangue minerals: Quartz

Geologic description:

This occurrence consists of a one-meter-wide altered quartz vein that is localized in a shear zone that cuts Permian marble and amphibolite. A grab sample of the quartz vein contained 1 part per million (ppm) silver, 500 ppm copper, and 50 ppm molybdenum (MacKevett, 1976).

Alteration:

Age of mineralization:

Permian or younger based on the age of the marble and amphibolite the veins cut.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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

Site type: Occurrence

ARDF no.: MC207

Latitude: 61.0220 **Quadrangle:** MC A-3

Longitude: 142.0423

Location description and accuracy:
This occurrence is in outcrops along an unnamed east tributary to Goat Creek. It is at an elevation of about 2,500 feet, 3,500 feet northwest of elevation 4380,and 6,500 feet southwest of elevation 5170. The site is about 2,600 feet north-northwest of the center of section 9, T. 10 S., R. 19 .E of the Copper River Meridian. This is locality 3 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite(?)

Gangue minerals:

Geologic description:
A sample of gabbro from outcrops along this stream contained 1,000 parts per million chromium (MacKevett, 1976). The gabbro is part of the Upper Jurassic Chitina Valley batholith (MacKevett, 1978). K/Ar dates for the batholith range from 138 to 146 +/- 4 Ma (MacKevett, 1978).

Alteration:

Age of mineralization:
Late Jurassic(?); K/Ar dates for the host Chitina Valley batholith range from 138 to 146 +/- 4 Ma (MacKevett, 1978).

Deposit model:
Disseminated chromite in gabbro

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (east 0f north tributary to Barnard Glacier)

Site type: Occurrence

ARDF no.: MC208

Latitude: 61.2437 **Quadrangle:** MC A-2

Longitude: 141.6627

Location description and accuracy:

This occurrence is east of an unnamed north tributary to Barnard Glacier. It is at an elevation of about 5,000 feet, 7,500 feet northwest of peak 8918. The site is in the SW1/4 of section 21, T. 7 S., R. 21 E. of the Copper River Meridian. This is locality 34 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Sn

Other: Mn

Ore minerals:

Gangue minerals:

Geologic description:

This occurrence consists of a altered dike rock. A sample contained 3,000 parts per million (ppm) manganese and 100 ppm tin (MacKevett, 1976). The dike intrudes Paleozoic metamorphic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:

The altered dike intrudes Paleozoic metamorphic rocks.

Deposit model:

Disseminated sulfide minerals?

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (northwest of lower Barnard Glacier)

Site type: Occurrence

ARDF no.: MC209

Latitude: 61.1434 **Quadrangle:** MC A-2

Longitude: 141.7273

Location description and accuracy:

This occurrence is on the east-facing slopes along the north side of lower Barnard Glacier. It is at an elevation of about 5,000 feet, about 2,500 feet from the glacier and 5,500 feet south of peak 6840. The occurrence is in the NW1/4 of section 36, T. 8 S., R. 20 E. of the Copper River Meridian. This is locality 28 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Fe

Other: Cu

Ore minerals: Magnetite

Gangue minerals:

Geologic description:

This occurrence consists of a magnetite-rich skarn that is developed near a small monzonite intrusion. A sample of the skarn contained 200 parts per million copper and more than 20 percent iron (MacKevett, 1976). The skarn is developed in upper Paleozoic metamorphic rocks (MacKevett, 1978).

Alteration:

Calc-silicate replacement.

Age of mineralization:

Late Paleozoic or younger based on the age of the host rocks.

Deposit model:

Iron skarn

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (near Barnard Glacier)

Site type: Occurrence

ARDF no.: MC210

Latitude: 61.1384 **Quadrangle:** MC A-2

Longitude: 141.6054

Location description and accuracy:
This occurrence is on the south wall of Barnard Glacier near its confluence with an unnamed south tributary. It is at an elevation of about 3,800 feet, 5,400 feet west of peak 5730. The site is near the northwest corner of section 35, T. 8 S., R. 21 E. of the Copper River Meridian. This is locality 26 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu, Fe

Other:

Ore minerals: Pyrite

Gangue minerals:

Geologic description:
This occurrence consists of a pyrite-bearing dike; a sample contained 15 percent iron and 300 parts per million copper (MacKevett, 1976). The dike intrudes Paleozoic metasedimentary rocks (MacKevett, 1978).

Alteration:

Age of mineralization:
The mineralized dike intrudes Paleozoic metamorphic rocks.

Deposit model:
Disseminated sulfide minerals

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (south of Barnard Glacier)

Site type: Occurrence

ARDF no.: MC211

Latitude: 61.1047 **Quadrangle:** MC A-2

Longitude: 141.6353

Location description and accuracy:

This occurrence is at an elevation of about 5,300 feet, about 8,000 feet from Barnard Glacier and 1,800 feet north-northeast of elevation 6440. The occurrence is about 1,000 feet north-northeast of the center of section 11, T. 9 S., R. 21 E. of the Copper River Meridian. This is locality 15 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cu, Fe

Other:

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

Gangue minerals:

Geologic description:

This occurrence consists of a sulfide-bearing dike; a sample contained 20 percent iron and 500 parts per million copper (MacKevett, 1976). The dike is near the thrust contact between Triassic Nikolai Greenstone and upper Paleozoic metamorphic rocks (MacKevett, 1978).

Alteration:

Age of mineralization:

Deposit model:

Disseminated sulfide minerals

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (north bank of Chitina River)

Site type: Occurrence

ARDF no.: MC212

Latitude: 61.0459 **Quadrangle:** MC A-2

Longitude: 141.7115

Location description and accuracy:

This occurrence is at an elevation of about 2,000 feet on the north bank of the Chitina River, about 3 miles downstream of the terminus of Chitina Glacier. The occurrence is about 2,000 feet east of the center of section 32, T. 9 S., R. 21 E. of the Copper River Meridian. This is locality 16 of MacKevett (1976); the location is it is accurate to within about 1,000 feet.

Commodities:

Main: Cu

Other:

Ore minerals: Malachite

Gangue minerals: Epidote, quartz

Geologic description:

This occurrence consists of malachite along fractures and unspecified copper-bearing minerals in quartz-epidote veins that cut Triassic Nikolai Greenstone (MacKevett, 1976, 1978). Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Alteration:

Quartz-epidote veining and replacement(?).

Age of mineralization:

Cretaceous? Copper mineralization is common in Nikolai Greenstone and is thought to have accompanied regional deformation and low-grade metamorphism in the Late Jurassic to Early Cretaceous (MacKevett and others, 1997).

Deposit model:

Basaltic Cu (Cox and Singer, 1986; model 23)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
23

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978; MacKevett and others, 1997.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Harrais

Site type: Prospect

ARDF no.: MC213

Latitude: 61.0275 **Quadrangle:** MC A-2

Longitude: 141.6250

Location description and accuracy:

This prospect is on Margaret Creek (which is not named on the McCarthy A-2 quadrangle). It is about 1,500 feet east-northeast of the cabins at Hubberts landing area and 3,500 feet northwest of the terminus of the Chitina Glacier. It is at an elevation of about 2,500 feet in the SE 1/4 of section 2, T. 10 S., R. 21 E. of the Copper River Meridian. This is locality 2 of MacKevett (1976). It was included in Cobb and MacKevett (1980) under the name 'Harrais'.

Commodities:

Main: Ag, Cu, Pb, Zn

Other:

Ore minerals: Azurite, bornite, chalcopyrite, galena, limonite, malachite, native silver, pyrite, sphalerite

Gangue minerals:

Geologic description:

Small, sporadically distributed pods and disseminations of chalcopyrite, galena, sphalerite, bornite, pyrite, native silver, limonite, malachite and azurite are localized along faults and in shear zones that cut Permian marble and calcareous schist (Seitz, 1963). The largest sulfide pod measured 10 inches long and 4 inches wide; a sample contained 4.78 percent copper, 6.53 percent lead, and 13.15 percent zinc (Seitz, 1963). The deposits were discovered in 1926 and explored through 1932. Six short adits, 3 to 30 feet long, were driven in outcrops along the west side of Margaret Creek. Some blasting and sampling were done in Dry Gulch about 1/4 mile west of Margaret Creek (Seitz, 1963). A log cabin, cache, and water reservoir and aqueduct were constructed near the prospect.

Alteration:

Oxidation; secondary limonite, azurite, and malachite are common.

Age of mineralization:

The deposit is younger than the age of the host marble and schist and thus Permian or

younger (MacKevett, 1978).

Deposit model:
Pods and disseminations of base-metal sulfides

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

Production Status: None

Site Status: Undetermined

Workings/exploration:
The deposits were discovered in 1926 and explored through 1932. Six short adits, 3 to 30 feet long, were driven in outcrops along the west side of Margaret Creek. Some blasting and sampling were done in Dry Gulch about 1/4 mile west of Margaret Creek (Seitz, 1963). A log cabin, cache, and water reservoir and aqueduct were constructed near the prospect.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
Seitz, 1963; MacKevett, 1976; MacKevett, 1978; Cobb and MacKevett, 1980.

Primary reference: Seitz, 1963

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (terminus of Ram Glacier)

Site type: Occurrence

ARDF no.: MC214

Latitude: 61.0071 **Quadrangle:** MC A-2

Longitude: 141.4289

Location description and accuracy:
This occurrence is 1,500 feet southwest of the terminus of Ram Glacier. It is at an elevation of about 3,100 feet, near the center of the south boundary of section 12, T. 10 S., R. 22 E. of the Copper River Meridian. This is locality 1 of MacKevett (1976); the location is accurate to within about 500 feet.

Commodities:

Main: Fe

Other:

Ore minerals: Hematite, pyrite

Gangue minerals:

Geologic description:
This occurrence consists of networks of specular hematite veins in altered Pennsylvanian quartz monzonite (MacKevett, 1976). The quartz monzonite locally contains disseminated pyrite. It is part of a large and varied intrusive complex ranging from gabbro to granite that has K/Ar dates of 295 +/- 8 Ma and 209 +/- 9 Ma (MacKevett, 1978).

Alteration:

Age of mineralization:
Pennsylvanian or younger. The veins cut a pluton that has yielded K/Ar dates of 295 +/- 8 Ma and 209 +/- 9 Ma (MacKevett, 1978).

Deposit model:
Network of hematite veins in quartz monzonite

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface examination.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

Site name(s): Unnamed (near junction of Tittman and Anderson glaciers)

Site type: Occurrence

ARDF no.: MC215

Latitude: 61.1292 **Quadrangle:** MC A-1

Longitude: 141.0704

Location description and accuracy:
This occurrence is about 3,000 feet northeast of the confluence of Tittmann and Anderson Glaciers. It is at an elevation of about 5,100 feet, near the center of the east boundary of section 34, T. 8 S., R. 24 E. of the Copper River Meridian. It is occurrence 25 of MacKevett (1976); the location is accurate to within about 1,000 feet.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite(?)

Gangue minerals:

Geologic description:
This occurrence is in a mafic dike that intrudes Paleozoic metamorphic rocks; the dike contains disseminated unspecified metallic minerals. A sample contained 1,000 parts per million chromium (MacKevett, 1976; 1978).

Alteration:

Age of mineralization:
Paleozoic or younger based on the age of the host rocks of the dike.

Deposit model:
Disseminated chomium-bearing minerals in mafic intrusive

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface sampling.

Production notes:

Reserves:

Additional comments:
The locality is in the Wrangell-Saint Elias National Park and Preserve.

References:
MacKevett, 1976; MacKevett, 1978.

Primary reference: MacKevett, 1976

Reporter(s): Travis L. Hudson (Applied Geology, Inc.)

Last report date: 01/12/03

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