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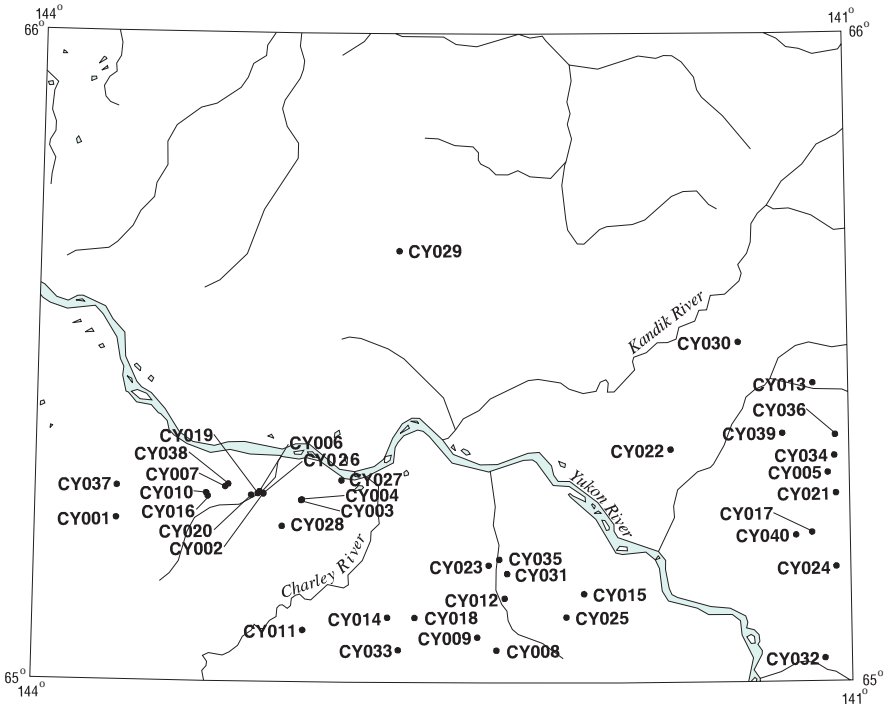
Alaska Resource Data File

Charley River 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 Charley River 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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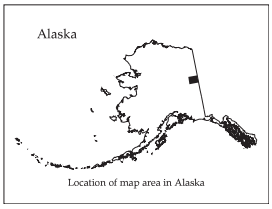

OPEN-FILE REPORT 00-290

Site name(s): Alder Creek

Site type: Mine

ARDF no.: CY001

Latitude: 65.25 **Quadrangle:** CY A-6

Longitude: 143.70

Location description and accuracy:

Alder Creek is a northwest-flowing tributary of Webber Creek, which drains into the Yukon River. Alder Creek is approximately 6 miles long. The exact location of placer mining on Alder Creek is unknown. The latitude and longitude coordinates correspond to an arbitrarily chosen point near the midpoint of the creek, in section 19, T. 5 N., R. 20 E., of the Fairbanks Meridian. The location is accurate to within 3 miles.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

There has been historic placer gold mining on Alder Creek, and the creek shows evidence of worked ground (Mertie, 1942).

The headwaters and upper portion of Alder Creek are underlain by Cretaceous to Tertiary conglomerate and other sedimentary rocks, but the creek then crosses a high-angle normal fault, and its lower half is underlain by Paleozoic to Precambrian metamorphic rocks (Dover and Miyaoka, 1988). The gold-bearing gravels at other placer mines within the quadrangle appear to be derived from the Cretaceous to Tertiary sedimentary rocks, and this may be the case with Alder Creek. This interpretation seems especially likely since Webber Creek, which Alder Creek joins, does not contain much, if any, gold (Cobb, 1976 [OFR 76-632]).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

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

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

Production Status: Yes

Site Status: Probably inactive

Workings/exploration:
Alder Creek is a site of historic placer exploration with possible minor production.

Production notes:
There has not been much, if any, placer gold produced from Alder Creek (Mertie, 1942).

Reserves:

Additional comments:
See also Webber Creek (CY037). This site lies within the Yukon-Charley Rivers National Preserve.

References:
Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Alice Gulch

Site type: Mine

ARDF no.: CY002

Latitude: 65.29 **Quadrangle:** CY B-5

Longitude: 143.16

Location description and accuracy:

Alice Gulch is located on a northeast-flowing tributary that joins Mineral Creek about one mile southeast of Woodchopper Creek. It is location 4 of Cobb (1972; MF-390). Alice Gulch is about half a mile long; the location is arbitrarily placed at the approximate midpoint of the stream, in section 2, T. 5 N., R. 21 E., of the Fairbanks Meridian. The location is accurate within a quarter of a mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Alice Gulch is a tributary of Mineral Creek (CY020), where some productive mining prior to 1912 has been reported (Prindle and Mertie, 1912). Alice Gulch is underlain by Cretaceous to Tertiary sedimentary rocks (Dover and Miyaoka, 1988). As at Fourth of July Creek (CY015), Coal Creek (CY006), and Woodchopper Creek (CY038), the source of gold is probably gravels derived from Tertiary conglomerate (Cobb, 1976 [OFR 76-632]).

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: Undetermined

Workings/exploration:

Surface exploration and prospecting has taken place, and there was some small production prior to 1912. More recent activity is not known.

Production notes:

The only reported production was prior to 1912.

Reserves:

Additional comments:

See also Mineral Creek (CY020). This site lies within the Yukon-Charley Rivers National Preserve.

References:

Prindle and Mertie, 1912; Cobb, 1972 (MF-390); Cobb, 1973 (B 1374); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Brooks, 1907

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Ben Creek

Site type: Mines

ARDF no.: CY003

Latitude: 65.28 **Quadrangle:** CY B-5

Longitude: 143.02

Location description and accuracy:

Ben Creek is a southeast-flowing tributary of Sam Creek, which flows northeast to join the Yukon River. Ben Creek is approximately 4.5 miles long. The location is arbitrarily placed at the approximate midpoint of the creek, in section 3, T. 5 N., R. 23 E., of the Fairbanks Meridian. The location is accurate to within 2.5 miles.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold, silver

Gangue minerals:

Geologic description:

The bedrock in the Ben Creek drainage is composed of the Middle Jurassic to Lower Cretaceous Glen Shale (Dover and Miyaoka, 1988). Small placer gold deposits have been found along Ben Creek (Mertie, 1942). One assay of the gold from Ben Creek had values of 896 parts Au per thousand and 100 parts Ag per thousand (Mertie, 1938). Mining on the creek began as early as 1921 and continued intermittently until at least 1965. A boomer dam was constructed along Ben Creek to store and control water for sluicing. In 1965, production was reported as 26 troy ounces of gold and 2 troy ounces of silver (National Park Service, 1990).

Alteration:

Age of mineralization:

Tertiary-Quaternary?

Deposit model:

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

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

39a

Production Status: Yes

Site Status: Undetermined

Workings/exploration:

Small placer gold deposits have been found in Ben Creek (Mertie, 1942). Mining on the creek began as early as 1921 and continued intermittently until at least 1965. A boomer dam was constructed to control and store water for sluicing (National Park Service, 1990).

Production notes:

In 1965, production was reported as 26 troy ounces of gold and 2 troy ounces of silver (National Park Service, 1990).

Reserves:

Additional comments:

See also Sam Creek (CY027). This site is within the Yukon-Charley Rivers National Preserve.

References:

Mertie, 1938; Mertie, 1942; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Boulder Creek

Site type: Mines

ARDF no.: CY004

Latitude: 65.281 **Quadrangle:** CY B-5

Longitude: 143.017

Location description and accuracy:

Boulder Creek is a northwest-flowing tributary of Coal Creek. The coordinates given are for placers at the mouth of the creek, in the NE1/4 of section 3, T. 5 N., R. 22 E., of the Fairbanks Meridian. The creek is about 3 miles long and could have other placer production or exploration along its length. It is location 5 of Cobb (1972 [MF-390]). The location is accurate.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold, silver

Gangue minerals:

Geologic description:

The bedrock in the Boulder Creek drainage is composed of Cretaceous to Tertiary sedimentary rocks (Dover and Miyaoka, 1988). Placer gold in stream gravels was bright and flaky and had a fineness of 909.5 (National Park Service, 1990). The bench-placer gold is unevenly distributed and tarnished with manganese. Gold was found in the normal-fault contact zone between Tertiary conglomerate on the north and Permian conglomerate with quartz stockwork veins on the south (National Park Service, 1990).

Claims were staked along Boulder Creek as early as 1908, and mining also began about then (National Park Service, 1990; Chapin, 1914). During 1935-36, small-scale drift mining took place along the creek. Placer mines were located near the mouth of the creek, but other locations along the creek may have been mined or prospected. By 1943, the creek had produced 88 troy ounces of gold and 11 troy ounces of silver. By 1951, 334 troy ounces of gold and 42 troy ounces of silver had been removed from the creek (National Park Service, 1990).

Alteration:

Age of mineralization:

Tertiary-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 along the creek began as early as 1908 and continued intermittently until at least 1951. There were both stream and bench placer mines and prospects (National Park Service, 1990).

Production notes:
By 1943, the creek had produced 88 troy ounces of gold and 11 troy ounces of silver. By 1951, 334 troy ounces of gold and 42 troy ounces of silver had been removed from the creek (National Park Service, 1990).

Reserves:

Additional comments:
See also Coal Creek (CY006) and Colorado Creek (CY007). This site is within the Yukon-Charley Rivers National Preserve.

References:
Chapin, 1914 (B 592); Mertie, 1938; Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: National Park Service, 1990

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Casca Zinc

Site type: Prospect

ARDF no.: CY005

Latitude: 65.322 **Quadrangle:** CY B-1

Longitude: 141.079

Location description and accuracy:

The Casca Zinc prospect is at about 2,600 feet elevation, approximately 1/3 mile southwest of Tindir Creek, in the NE1/4 section 26, T. 6 N., R. 32 E., of the Fairbanks Meridian. This prospect is on land selected by or conveyed to Doyon, Limited. The location is accurate.

Commodities:

Main: Pb, Zn

Other: Ba

Ore minerals: Barite, galena(?), hematite, sphalerite

Gangue minerals:

Geologic description:

The mineralization at Casca Zinc prospect is hosted by limestone of the Lower Cambrian Funnel Creek Formation (Brabb and Churkin, 1969). The deposits consists of fracture and open-space fillings that locally contain specular hematite, barite, and sphalerite. The sphalerite is typically massive, very fine grained, and compact, but is also found disseminated throughout the limestone (DiMarchi and others, 1993). Alteration consists mainly of silicification of fossiliferous limestone, but iron oxides and specular hematite can be locally abundant. Most of the iron oxide, alteration, and sulfide mineralization is confined to fault and fracture zones. Soil sampling programs starting in the mid-1970s have outlined areas of anomalous zinc and lead. Rock samples from Casca Zinc prospect yield as much as 18.9 percent Zn (DiMarchi and others, 1993).

Alteration:

Iron oxide, sulfides, and silicification occur mainly along fault and fracture zones (DiMarchi and others, 1993).

Age of mineralization:

Early Cambrian or younger, based on the age of the host rocks.

Deposit model:
Carbonate-hosted Zn-Pb; Appalachian Zn (Schmidt, 1997; Cox and Singer, 1986; model 32b)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
32b

Production Status: None

Site Status: Active

Workings/exploration:
Several soil and rock sampling programs have been carried out on the property, beginning in the mid-1970s. In 1993, a detailed mapping program was completed by ASA Inc. This property lies on Doyon, Limited selected or conveyed land.

Production notes:

Reserves:

Additional comments:
This property lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. This site is within the Yukon-Charley Rivers National Preserve.

References:
Brabb and Churkin, 1969; DiMarchi and others, 1993; Schmidt, 1997.

Primary reference: DiMarchi and others, 1993

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Coal Creek; Adamic; Coal Creek Hydraulic Mining Association; Emily Association; Forrest Association; Golden Eagle Bench Association; Gold Placers, Inc.; Malstrom Association; Slaven Association; McDonald

Site type: Mines

ARDF no.: CY006

Latitude: 65.293 **Quadrangle:** CY B-5

Longitude: 143.173

Location description and accuracy:

Coal Creek is a north-flowing tributary of the Yukon River. The coordinates given are for the approximate midpoint of placer tailings along the creek, in the SW1/4 section 35, T. 6 N., R. 22 E., of the Fairbanks Meridian. There are many historic placer mines all along the river; placer tailings mapped on the Charley River B-5 U.S. Geological Survey topographic sheet (1956 edition, revised in 1974) indicate approximately 4 miles of worked ground. It is location 5 of Cobb (1972 [MF-390]). The location is accurate.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold, silver

Gangue minerals:

Geologic description:

The head of Coal Creek crosses metamorphic rocks and greenstone of Paleozoic age, and as the river flows northward, it crosses a belt of Upper Cretaceous to Tertiary conglomerate and other sedimentary rocks (Brabb and Churkin, 1969; Dover and Miyaoka, 1988). Placers are not found south of the conglomerate belt, and placer grounds drop sharply in value at the north edge. The placers were largely derived from the conglomerate, which was derived in turn, from the older metamorphic rocks. This interpretation is supported by the presence of garnets and garnetiferous schist in the gravels (Prindle and Mertie, 1912; Cobb, 1973 (B 1374)). Monazite has also been reported in concentrates (Bates and Wedow, 1953). Mean fineness values from 16 assays were 897 parts Au per thousand and 96 parts Ag per thousand (Mertie, 1942).

Active mining and prospecting took place intermittently between 1902 and 1986. In 1986, the land was donated to the National Park Service (National Park Service, 1990). Large-scale placer mining along Coal Creek and its tributaries began in 1934. In 1934,

placer claims along Coal Creek extended for 7 miles, reaching to Colorado Creek. A bucket-line floating dredge began operation along the creek in 1935, and a tractor-haul road was constructed to the Yukon River. Between 1936 and 1957 92,385 ounces of placer gold were recovered from Coal Creek by the owners of the dredge, Gold Placers, Inc. (National Park Service, 1990). Mining along Coal Creek continued in 1962-1964 and 1973-1986 (National Park Service, 1990).

Alteration:

Age of mineralization:
Tertiary to Quaternary.

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

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

Production Status: Yes; medium

Site Status: Inactive

Workings/exploration:
Active mining and prospecting took place intermittently between 1902 and 1986. In 1986, the land was donated to the National Park Service (National Park Service, 1990). Large-scale placer mining along Coal Creek and its tributaries began in 1934. In 1934, placer claims along Coal Creek extended for 7 miles, reaching to Colorado Creek. A bucket-line floating dredge began operation along the creek in 1935, and a tractor-haul road was constructed to the Yukon River (National Park Service, 1990).

Production notes:
The owners of the dredge, Gold Placers, Inc., recovered 92,385 ounces of placer gold between 1936 and 1957 (National Park Service, 1990).

Reserves:

Additional comments:
This site is within the Yukon-Charley Rivers National Preserve.

References:
Prindle and Mertie, 1912; Mertie, 1942; Smith, 1942; Bates and Wedow, 1953; Overstreet, 1967; Brabb and Churkin, 1969; Cobb, 1972 (MF-390); Cobb, 1973 (B 1374); Lyle, 1973; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Colorado Creek

Site type: Mines

ARDF no.: CY007

Latitude: 65.3 **Quadrangle:** CY B-5

Longitude: 143.3

Location description and accuracy:

Colorado Creek is a northeast-flowing tributary of Coal Creek, which is a northeast-flowing tributary of the Yukon River. Colorado Creek joins Coal Creek just south of the major placer activity on Coal Creek (CY006). Colorado Creek is about 7 miles long; coordinates for the mines have been arbitrarily placed at the approximate midpoint of the creek, in the NE1/4 section 19, T. 5 N., R. 22 E., of the Fairbanks Meridian. The exact location along Colorado Creek where mining was conducted is uncertain, although the lower section of Colorado Creek seems most likely. The location is accurate to within 4 miles.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold, silver

Gangue minerals:

Geologic description:

In 1905, Colorado Creek was the location of most mining activity in the Coal Creek valley (Prindle, 1906). There is an unconfirmed report of the discovery of a galena-bearing quartz vein (Brooks, 1907). The exact location along Colorado Creek where mining was conducted is uncertain, although the lower Colorado Creek seems most likely.

The bedrock at the head of Colorado Creek is Paleozoic phyllitic argillite. The creek crosses a fault, and the lower portion of the creek flows over Tertiary to Cretaceous sedimentary rocks (Dover and Miyaoka, 1988). As at Fourth of July Creek (CY015), Coal Creek (CY006), and Woodchopper Creek (CY038), the source of gold is probably gravels derived from Tertiary conglomerate.

Mining took place along Colorado Creek intermittently between 1905 and 1946. Nuggets as large as half an ounce were found. The reported production from Colorado Creek in 1946 was 49 troy ounces of gold and 1 troy ounce of silver (National Park Service, 1990).

Alteration:

Age of mineralization:
Quaternary?

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

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

Production Status: Yes; small

Site Status: Undetermined

Workings/exploration:
Mining took place along Colorado Creek intermittently between 1905 and 1946. Nuggets as large as half an ounce were found (National Park Service, 1990).

Production notes:
The reported production from Colorado Creek in 1946 was 49 troy ounces of gold and 1 troy ounce of silver (National Park Service, 1990).

Reserves:

Additional comments:
See also Coal Creek (CY006) and Boulder Creek (CY004). This site is within the Yukon-Charley Rivers National Preserve.

References:
Prindle, 1906 (B 295); Brooks, 1907 (B 314); Mertie, 1938; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: National Park Service, 1990

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Derwent

Site type: Occurrences

ARDF no.: CY008

Latitude: 65.05 **Quadrangle:** CY A-3

Longitude: 142.30

Location description and accuracy:

The Derwent zone covers a large area along an east-northeast trend from section 11 in the northeast corner of T. 2 N., R. 26 E., of the Fairbanks Meridian to section 22, just southeast of the center of T. 3 N., R. 27 E., of the Fairbanks Meridian. The coordinates are for the approximate center of the zone, in section 32, T. 3 N., R. 27 N., of the Fairbanks Meridian. This prospect is located on Doyon, Limited selected or conveyed land. The location is accurate to within 1 or 2 miles.

Commodities:

Main: Zn

Other: Ag, Mo, U, V

Ore minerals: Azurite, chalcopyrite, malachite, sphalerite(?)

Gangue minerals:

Geologic description:

The Derwent zone of zinc geochemical anomalies is hosted by a northwest-trending belt of metasedimentary and possibly metavolcanic rocks. This belt lies between a granitic batholith and the Tintina fault (Doyon, Limited, 1998). The zone extends for 24 miles between the Seventymile and Charley Rivers. It is mostly underlain by Paleozoic phyllite, graphitic schist, chert, phyllite, and marble (Doyon, Limited, 1998).

The zone has been defined by soil samples containing zinc values greater than 5,200 ppm zinc. Some samples, especially ones from a color anomaly, are also weakly anomalous in copper, silver, molybdenum, vanadium, tungsten, and uranium. Soils contain greater than 5,200 parts per million Zn, 3.4 parts per million Ag, 3,000 parts per million V, 18 parts per million U, and 285 parts per million Mo.

All of the soil anomalies are probably due to elevated background concentrations in the metasedimentary rocks. Locally, the zone contains quartz veins and segregations that carry visible copper sulfides and oxides. Also, samples of graphitic schist breccia contain 920 parts per million Zn, 900 parts per million V, 85 parts per million Mo, 7 parts per million U, and 1.2 parts per million Ag (Doyon, Limited, 1986). The Derwent zone may be a fault-offset block from near the Anvil district that has been displaced 300 miles by

the Tintina fault (Doyon, Limited, 1998).

This area has been examined by stream silt samples, panned concentrates, soil and rock sampling of the color anomalies, and regional reconnaissance since the mid-1970s (Doyon, Limited, 1998).

Alteration:

Age of mineralization:
Paleozoic?

Deposit model:
Shale-hosted Zn-Pb (Schmidt, 1997; Cox and Singer, 1986; model 31a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
31a

Production Status: None

Site Status: Active

Workings/exploration:
Since the mid-1970s, this area has been examined by stream silt samples, panned concentrates, soil and rock sampling of the color anomalies, and regional geologic reconnaissance (Doyon, Limited, 1998).

Production notes:

Reserves:

Additional comments:
These prospects are located on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited.

References:
Doyon, Limited, 1986; Schmidt, 1997; Doyon, Limited, 1998.

Primary reference: Doyon, Limited, 1998

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Dome Creek (tributary of Washington Creek)

Site type: Mine

ARDF no.: CY009

Latitude: 65.07 **Quadrangle:** CY A-3

Longitude: 142.37

Location description and accuracy:

Dome Creek flows north-northeast and joins Washington Creek near Strawberry Dome. The main mining and prospecting activity took place about 5 miles from the head of Dome Creek in section 24, T. 3 N., R. 26 E., of the Fairbanks Meridian. Prospecting and mining may have occurred along the creek in other places. The location is accurate to within 1 mile. This creek lies within Doyon, Limited selected or conveyed land.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Some placer mining took place at the head of Dome Creek prior to 1938 (Mertie, 1938). The bedrock in the Dome Creek drainage is composed of Cretaceous to Tertiary sandstone, conglomerate, and mudstone. The sedimentary rocks are poorly sorted and poorly consolidated, and the conglomerate contains well-rounded clasts (Dover and Miyaoka, 1988). The source of the gold is in gravels probably derived from these sedimentary rocks (Cobb, 1976 [OFR 76-632]).

Alteration:

Age of mineralization:

Quaternary?

Deposit model:

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

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

39a

Production Status: Yes

Site Status: Active

Workings/exploration:

Some placer mining took place at the head of Dome Creek prior to 1938 (Mertie, 1938).

Production notes:

Placer production was probably small.

Reserves:

Additional comments:

This creek lies within Doyon Limited selected or conveyed land. For more information, contact Doyon, Limited. See also Washington Creek (CY035), Nugget Creek (CY023), Eagle Creek (CY012), and Surprise Creek (CY031). This site is within the Yukon-Charley Rivers National Preserve.

References:

Mertie, 1938; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Mertie, 1938

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Dome Creek (tributary of Woodchopper Creek)

Site type: Mine

ARDF no.: CY010

Latitude: 65.29 **Quadrangle:** CY B-5

Longitude: 143.37

Location description and accuracy:

Dome Creek is a northwest-flowing tributary of Woodchopper Creek, and it joins Woodchopper Creek about 2 miles downstream from the center of the major placer activity along Woodchopper Creek (CY038). Dome Creek is about 4 miles long. Geographic coordinates have been arbitrarily placed at the approximate midpoint of the creek, in section 31, T. 6 N., R. 22 E., of the Fairbanks Meridian. The location is accurate to within 3 miles.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Dome Creek has produced a small amount of placer gold, derived from mostly eroded Cretaceous to Tertiary sedimentary rocks (Brabb and Churkin, 1969; Mertie, 1942; Dover and Miyaoka, 1988). All production was prior to 1938 (Mertie, 1942).

Alteration:

Age of mineralization:

Quaternary?

Deposit model:

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

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

39a

Production Status: Yes

Site Status: Undetermined

Workings/exploration:

A small amount of placer gold was produced from Dome Creek prior to 1938 (Mertie, 1942).

Production notes:

Reserves:

Additional comments:

See also Woodchopper Creek (CY038) and Mineral Creek (CY020). This site is within the Yukon-Charley Rivers National Preserve.

References:

Mertie, 1942; Brabb and Churkin, 1969; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Drayham Creek

Site type: Prospects

ARDF no.: CY011

Latitude: 65.08 **Quadrangle:** CY A-5

Longitude: 143.01

Location description and accuracy:

Drayham Creek is a northwest-flowing tributary of the Charley River. Drayham Creek is approximately 6 miles long. The exact location of placer mining on the creek is not known. Geographic coordinates have been arbitrarily placed at the approximate midpoint of the creek, in section 23, T. 3 N., R. 23 E., of the Fairbanks Meridian. The location is accurate to within 3 miles.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Some placer mining reportedly has occurred along Drayham Creek, but the exact location, production totals, and dates of mining activity are unknown (Mertie, 1942; Lyle, 1973).

The bedrock at the head of Drayham Creek is composed of Paleozoic argillite that is in fault contact with Cretaceous to Tertiary granitic rocks. The stream follows the fault for 2 miles downstream, and then the stream flows north while the fault continues more east-west (Dover and Miyaoka, 1988).

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: Undetermined

Workings/exploration:
Some placer mining and exploration has taken place along the creek.

Production notes:

Reserves:

Additional comments:
This site is within the Yukon-Charley Rivers National Preserve.

References:
Mertie, 1942; Lyle, 1973; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Eagle Creek

Site type: Prospects

ARDF no.: CY012

Latitude: 65.13 **Quadrangle:** CY A-3

Longitude: 142.27

Location description and accuracy:

Eagle Creek is a northwest-flowing tributary of Washington Creek. It joins Washington Creek about 1 mile downstream of the Dome Creek junction. Eagle Creek is about 5 miles long. The coordinates are for the center of mining activity along Eagle Creek, in section 33, T. 4 N., R. 27 E., of the Fairbanks Meridian, although placer mining and prospecting probably took place along the length of the creek. The location is accurate to within 1 mile. This creek is located within Doyon, Limited selected or conveyed land.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer gold was first found in Eagle Creek in 1907. The creek has been prospected but was never mined (Lyle, 1973).

The bedrock in the Eagle Creek drainage is composed of Cretaceous to Tertiary sandstone, conglomerate, and mudstone. The sedimentary rocks are poorly sorted and poorly consolidated, and the conglomerate contains well-rounded clasts (Lyle, 1973; Dover and Miyaoka, 1988).

Alteration:

Age of mineralization:

Tertiary - 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: Active

Workings/exploration:

Placer gold was first found in Eagle Creek in 1907. The creek has been prospected but never mined (Lyle, 1973).

Production notes:

Reserves:

Additional comments:

This placer prospect lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. See also Washington Creek (CY035), Nugget Creek (CY023), Dome Creek (CY009), and Surprise Creek (CY031).

References:

Brooks, 1907 (B 314); Prindle and Mertie, 1912; Prindle, 1913; Mertie, 1938; Mertie, 1942; Cobb, 1972 (MF-390); Lyle, 1973; Cobb, 1976 (OFR 76-632); National Park Service, 1990.

Primary reference: Mertie, 1938

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Ettrain Creek

Site type: Prospect

ARDF no.: CY013

Latitude: 65.46 **Quadrangle:** CY B-1

Longitude: 141.13

Location description and accuracy:

The center of the Ettrain Creek prospect is located in section 3, T. 7 N., R. 32 E., of the Fairbanks Meridian; it is near pingos marked on the 1956 U.S. Geological Survey Charley River B-1 topographic map. The prospect covers about 4 square miles. The location is accurate within 1 mile. This prospect is located within Doyon Limited selected or conveyed land.

Commodities:

Main: Zn

Other: As, Cd, Cu, Pb, Sb, W

Ore minerals:

Gangue minerals: Quartz

Geologic description:

The geology at the Ettrain Creek prospect consists of north-dipping Cambrian through Devonian sedimentary rocks, which include the Jones Ridge, Ogilvie, and Nation River Formations, and the McCann Hill Chert (Miyaoka, 1990). The sequence is exposed within a fenster surrounded by the Jones Ridge Formation (DiMarchi and others, 1993). Nearby northwest-trending thrust faults may be a source of mineralization (Dover and Miyaoka, 1988). Silicification is present as quartz stockwork veining in limestone, and as pervasive chalcedonic quartz replacements in limestone breccias. The silicified breccias locally contain small amounts of iron-oxide gossan. Quartz veins show multiple cross-cutting relationships. Local occurrences of iron-oxide gossan containing black pseudomorphs of cubic and hexagonal minerals were also reported. Rock and soil samples show widespread zinc anomalies and lesser anomalies of other metals (lead, arsenic, copper, antimony, tungsten, and cadmium) (DiMarchi and others, 1993).

The Ettrain Creek prospect has been explored by soil and surface sampling since the mid-1970s.

Alteration:

Quartz stockwork veining in limestone and pervasive chalcedonic quartz replacements

in limestone breccias are found throughout the prospect. Locally, small amounts of iron-oxide gossan are found in quartz veins, and some black oxides with cubic and hexagonal shapes are found in the gossan (DiMarchi and others, 1993).

Age of mineralization:

Deposit model:
Carbonate-hosted Zn-Cu? (Cox and Singer, 1986; model 32b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
32b?

Production Status: None

Site Status: Active

Workings/exploration:
The Ettrain Creek prospect has been soil- and rock-sampled several times since the mid-1970s. In 1993, ASA Inc. conducted a soil and rock sampling program and did some geologic mapping at the prospect. This property lies on Doyon, Limited selected or conveyed land.

Production notes:

Reserves:

Additional comments:
This property lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited.

References:
Dover and Miyaoka, 1988; Miyaoka, 1990; DiMarchi and others, 1993.

Primary reference: DiMarchi and others, 1993

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Flat Creek

Site type: Mines

ARDF no.: CY014

Latitude: 65.1 **Quadrangle:** CY A-4

Longitude: 142.7

Location description and accuracy:

Flat Creek is a tributary of the Charley River; their confluence is in T. 4 N., R. 24 E., of the Fairbanks Meridian. Flat Creek is about 10 miles long. The exact location of placer mining along Flat Creek is not known. Coordinates have been arbitrarily placed at the approximate midpoint of the creek in section 18, T. 3 N., R. 25 E., of the Fairbanks Meridian. The location is accurate to within 10 miles.

Commodities:

Main: Au

Other:

Ore minerals:

Gangue minerals:

Geologic description:

Flat Creek was reported as a placer gold prospect in 1915 by Brooks (1915). The bedrock in the upper half of Flat Creek is Precambrian or Paleozoic, medium- to high-grade pelitic schist; the lower half is underlain by Cretaceous to Tertiary sedimentary rocks (Dover and Miyaoka, 1988). The likely source of gold in other creeks in the area (Fourth of July Creek (CY015), Coal Creek (CY006), and Woodchopper Creek (CY038)) is the Tertiary conglomerate (Cobb, 1976 [OFR 76-632]).

Alteration:

Age of mineralization:

Tertiary - 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: Probably inactive

Workings/exploration:

Prospecting along Flat Creek first began in 1915, and some gold was found (Brooks, 1915).

Production notes:

Reserves:

Additional comments:

This site is within the Yukon-Charley Rivers National Preserve.

References:

Brooks, 1915; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Brooks, 1915

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Fourth of July Creek; Bauer; Ellington; Fourth f Julys Co.; July Creek Mining Co.; July Creek Placer Co.

Site type: Mines

ARDF no.: CY015

Latitude: 65.137 **Quadrangle:** CY A-2

Longitude: 141.979

Location description and accuracy:

Fourth of July Creek is a northeast-flowing tributary of the Yukon River. Its confluence with the Yukon is near the town of Nation. Placer mining and exploration took place along the entire creek, which is about 16 miles long. Coordinates given are for the approximate center of the placer ground, which is in section 35, T. 4 N., R. 28 E., of the Fairbanks Meridian. The location is accurate.

Commodities:

Main: Au

Other: Ag, Hg(?), Ir, Pd, Pt

Ore minerals: Gold, gold-platinum alloys, silver

Gangue minerals:

Geologic description:

The upper basin of Fourth of July Creek lies in Cretaceous to Tertiary sandstone, mudstone, and conglomerate derived from erosion of older metamorphic rocks (Dover and Miyaoka, 1988). The conglomerate is auriferous and probably is the source of all or most of the placer gold in Fourth of July Creek (Brooks, 1907). The placers immediately downstream from the upper basin also are underlain by conglomerate and other sedimentary rocks. The bench deposits on the northwest side of the valley are also auriferous but were not mined (Mertie, 1938). Platinum metals and silver are alloyed with the gold; a report of mercury is unverified. The mean of 22 assays of the gold indicates the average fineness is 892 parts Au per thousand, 99 parts Ag per thousand, and 9 parts dross per thousand. In 1942, one gold specimen assayed 0.23 percent platinum and iridium, with a trace of palladium (Mertie, 1938).

The first claims along Fourth of July Creek were staked in 1898, and within 10 days most of the creek had been staked (National Park Service, 1990). There were about ten miners left working on the creek in 1904, and six in 1906. Production between 1898 and 1906 was between $25,000 and $30,000 (1906 dollars) (National Park Service, 1990). A hydraulic plant was installed along the creek in 1916 (Brooks, 1918). In 1938, the pay

streak was reported to be 400 to 500 feet wide, and the bedrock was overlain by 6 to 10 feet of gravel and 2 to 7 feet of muck. The gold was mainly found on and in the top 2 feet of bedrock (Mertie, 1938). The last year that productive mining was done on the creek was 1951. Mining ended due to high production costs (National Park Service, 1990).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Yes; medium

Site Status: Probably inactive

Workings/exploration:
Discovery of gold at Fourth of July Creek was in 1898, and since then mining and exploration were nearly continuous until 1973 (Cobb, 1976 [OFR 76-632]). Most mining was by hydraulic methods, and the first hydraulic plant was installed in 1916 (Brooks, 1918). In 1941, the Fourth of July Creek operation was the largest in the Eagle district (Smith, 1942).

Production notes:
Production between 1898 and 1906 was between $25,000 and $30,000 (1906 dollars) (National Park Service, 1990).

Reserves:

Additional comments:
This site is within the Yukon-Charley Rivers National Preserve.

References:
Brooks, 1907 (B 314); Ellsworth and Parker, 1911; Prindle and Mertie, 1912; Ellsworth and Davenport, 1913; Chapin, 1914 (B 592); Mertie, 1938; Mertie, 1942; Smith, 1942; Koschmann and Bergendahl, 1968; Mertie, 1969; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1938

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Grouse Creek

Site type: Prospect

ARDF no.: CY016

Latitude: 65.29 **Quadrangle:** CY B-5

Longitude: 143.37

Location description and accuracy:

Grouse Creek probably is now called Moore Creek, a northwest-flowing, 2-mile-long tributary of Woodchopper Creek (Brooks, 1907; Cobb, 1976 [OFR 76-632]). It joins Woodchopper Creek in the southwest corner of T. 6 N., R. 21 E., of the Fairbanks Meridian. The exact location of prospecting on the creek is unknown. Coordinates given are for the approximate midpoint of Moore Creek in section 36, T. 6 N., R. 21 E., of the Fairbanks Meridian. If Moore Creek is Grouse Creek, then the location is accurate to within one mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Brooks reported gold prospects along Grouse Creek in 1906 (1907). It may now be called Moore Creek (Cobb, 1976 [OFR 76-632]). The bedrock geology in the Moore Creek area is composed of Upper Devonian(?) conglomerate, which contains pebble- to boulder-size clasts of quartzite and multicolored chert, as well as interbedded quartz-chert-arenite and wacke. This unit has been mapped as the Step Conglomerate (Dover and Miyaoka, 1988).

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: Probably inactive

Workings/exploration:
Grouse Creek was prospected in 1906 (Brooks, 1907).

Production notes:

Reserves:

Additional comments:
This site is within the Yukon-Charley Rivers National Preserve.

References:
Brooks, 1907 (B 314); Prindle, 1913; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Brooks, 1907

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Hard Luck Creek

Site type: Prospect

ARDF no.: CY017

Latitude: 65.23 **Quadrangle:** CY A-1

Longitude: 141.14

Location description and accuracy:

The Hard Luck Creek prospect is at an elevation of about 3,500 feet, near VABM Mush, in sections 27 and 34, T. 5 N., R. 32 E., of the Fairbanks Meridian. The location is accurate to within 2 miles. This prospect is located on Doyon, Ltd. selected or conveyed land.

Commodities:

Main: Ba, Zn

Other: Bi

Ore minerals:

Gangue minerals:

Geologic description:

The Hard Luck Creek prospect area is underlain by a structural duplex comprising a series of west-dipping thrust faults (Doyon, Limited, 1986). The duplex is formed within a north-dipping Devonian to Ordovician sequence of sedimentary rocks that includes the Road River Formation, McCann Hill Chert, and Nation River Formation (DiMarchi and others, 1993). The deposit is hosted in Upper Proterozoic carbonaceous shale and carbonate rocks of the Tindir Group (Doyon, Limited, 1986; Schmidt, 1997).

Soil samples in the area revealed anomalous zinc and barium (DiMarchi and others, 1993). WGM Inc.'s soil samples taken prior to the 1993 program also showed anomalous gold, but this was not replicated by the program in 1993 (DiMarchi and others, 1993).

Alteration:

Age of mineralization:

Late Proterozoic.

Deposit model:

Carbonaceous shale-hosted Zn-Pb (Schmidt, 1997; Cox and Singer, 1986; 32b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
32b

Production Status: None

Site Status: Active

Workings/exploration:
WGM Inc. conducted a soil sampling program in the mid-1970s, and ASA Inc. conducted another soil and rock sampling program in 1993.

Production notes:

Reserves:

Additional comments:
This property lies within Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. This site is within the Yukon-Charley Rivers National Preserve.

References:
Doyon, Limited, 1986; DiMarchi and others, 1993; Schmidt, 1997.

Primary reference: DiMarchi and others, 1993

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Irish Gulch

Site type: Mines

ARDF no.: CY018

Latitude: 65.1 **Quadrangle:** CY A-4

Longitude: 142.6

Location description and accuracy:
The location of the Irish Gulch is not known. Cobb (1972 [MF-390]) reports that it may be within the southeast quarter of the southwest quarter of the Charley River quadrangle, within the Circle mining district. Coordinates have been arbitrarily placed near the head of Maud Creek, in T. 3 N., R. 25 E., of the Fairbanks Meridian.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
There was some placer gold found, but there is no record of mining along the creek (Mertie, 1942).

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: Probably inactive

Workings/exploration:
At some point prior to 1942, placer gold was found in the creek.

Production notes:

Reserves:

Additional comments:
This site is within the Yukon-Charley Rivers National Preserve.

References:
Mertie, 1942; Cobb, 1976 (OFR 76-623).

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Iron Creek

Site type: Mines

ARDF no.: CY019

Latitude: 65.29 **Quadrangle:** CY B-5

Longitude: 143.18

Location description and accuracy:

Iron Creek is location 3 of Cobb (1972 [MF-390]). Iron Creek drains northward into Woodchopper Creek. The coordinates are for the center of the discovery claim located at the mouth of Iron Creek in section 3, T. 5 N., R. 21 E., of the Fairbanks Meridian. The location is accurate to within half a mile.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold, silver

Gangue minerals:

Geologic description:

Prospects along Iron Creek were first reported by Brooks in 1907. The pay streak was reported to be irregular and spotty, with coarse gold of high grade. One sample assayed $18.75 an ounce (1930 dollars) (Mertie, 1930). The bedrock at the head of Iron Creek is composed of Cretaceous to Tertiary sedimentary rocks and Upper Devonian (?) conglomerate. In the lower part of the drainage the conglomerate contains pebble- to boulder-size clasts of quartzite and chert (Dover and Miyaoka, 1988).

Iron Creek was first staked in 1901, and almost all early work was done by drift mining. In 1926, production was reported to be 9 troy ounces of gold and 1 troy ounce of silver. Iron Creek may still be a site of active mining and prospecting (National Park Service, 1990).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

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

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

Production Status: Yes; small

Site Status: Active?

Workings/exploration:
Iron Creek was first staked in 1901, and nearly all of the early work was done by drift mining. Iron Creek may still be a site of mining and prospecting (National Park Service, 1990).

Production notes:
In 1926, production was reported to be 9 troy ounces of gold and 1 troy ounce of silver (National Park Service, 1990).

Reserves:

Additional comments:
See also Woodchopper Creek (CY038), Alice Gulch (CY002), Mineral Creek (CY020), and Dome Creek (CY010). This site is within the Yukon-Charley Rivers National Preserve.

References:
Brooks, 1907 (B 314); Mertie, 1930; Mertie, 1938; Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1930 (B 816)

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Mineral Creek

Site type: Mine

ARDF no.: CY020

Latitude: 65.29 **Quadrangle:** CY B-5

Longitude: 143.18

Location description and accuracy:

Mineral Creek is location 4 of Cobb (1972 [MF-390]). It is a northwest-flowing tributary of Woodchopper Creek located about 4 miles from the Yukon River. Coordinates are for claims on Mineral Creek near the mouth of Alice Gulch (CY002), in section 2, T. 5 N., R. 21 E., of the Fairbanks Meridian. The location is accurate to within half a mile.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold

Gangue minerals:

Geologic description:

Mineral Creek is underlain primarily by Cretaceous to Tertiary sedimentary rocks (Dover and Miyaoka, 1988). The gold is found in gravels and in weathered conglomerate bedrock (Brooks, 1907).

Claims were staked on Mineral Creek in 1898, but mining did not take place until later. Early mining occurred near the mouth of Alice Gulch. Gold assayed 925 parts Au per thousand, and 072 parts Ag per thousand (Mertie, 1938). By 1906, eighteen men were mining 7 claims, mostly by shoveling. One small hydraulic plant was also used for stripping, and three steam hoists were being operated (National Park Service, 1990). In 1906, there were three benches on the south side of the valley, with 2 to 5 feet of gravel beneath as much as 30 feet of muck. The pay streaks were in parallel channels 12 to 14 feet wide. The gold was also in weathered, iron-stained conglomerate bedrock (Brooks, 1907).

Much of the mining was done in winter, with gravel stockpiled for sluicing in the spring. By 1935, 12,000 ounces of gold had been recovered from Mineral Creek (National Park Service, 1990).

A dredge was installed on Woodchopper Creek (CY038) in 1937, and mining on Mineral Creek became less active, although Alluvial Gold drilled 92 holes in Mineral Creek gravel in 1938. They reported finding about 1 ounce of gold for every 66 cubic yards of muck and gravel (National Park Service, 1990). Mining and prospecting occurred on

Mineral Creek as recently as 1986, and the area may still be active (National Park Service, 1990).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Yes; small

Site Status: Probably inactive

Workings/exploration:
Claims were staked on Mineral Creek in 1898, but mining did not take place until later. Early mining occurred near the mouth of Alice Gulch. Nuggets assayed 925 parts Au per thousand, and 072 parts Ag per thousand (Mertie, 1938). By 1906, eighteen men were mining 7 claims, mostly by shoveling. One small hydraulic plant was also used for stripping, and three steam hoists were being operated (National Park Service, 1990). Much of the mining was done in winter, with gravel stockpiled for sluicing in the spring (National Park Service, 1990).

A dredge was installed on Woodchopper Creek (CY038) in 1937, and mining on Mineral Creek became less active, although Alluvial Gold drilled 92 holes in Mineral Creek gravel in 1938. They reported finding about 1 ounce of gold for every 66 cubic yards of muck and gravel (National Park Service, 1990). Mining and prospecting occurred on Mineral Creek as recently as 1986, and the area may still be active (National Park Service, 1990).

Production notes:
By 1935, 12,000 ounces of gold had been removed from Mineral Creek.

Reserves:

Additional comments:
See also Woodchopper Creek (CY038), Dome Creek (CY010), Iron Creek (CY019), and Alice Gulch (CY002). This site is within the Yukon-Charley Rivers National Preserve.

References:
Brooks, 1907 (B 314); Mertie, 1930; Mertie, 1938; Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: National Park Service, 1990

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Nation Gossan

Site type: Prospects

ARDF no.: CY021

Latitude: 65.29 **Quadrangle:** CY B-1

Longitude: 141.05

Location description and accuracy:
The Nation Gossan prospects are located in section 1, T. 5 N., R. 32 E., of the Fairbanks Meridian. The location is accurate to within 2 miles. These prospects are on Doyon, Limited selected or conveyed land.

Commodities:

Main: Pb, Zn

Other: Ag

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

Gangue minerals:

Geologic description:
The Nation Gossan prospects consist of an oxidized fault breccia striking N20E within Upper Proterozoic dolomite and limestone of the Tindir Group (DiMarchi and others, 1993). The zone of brecciation and alteration is about 50 feet wide and three-quarters of a mile long. The gossan is best exposed in the saddle located in NE1/4 section 1, T 5 N., R. 32 E., of the Fairbanks Meridian. The gossan at this site consists of a dolomite breccia with apparent symmetrical zoning. The core of the gossan is characterized by pervasive silicification and abundant chalcedonic stockwork veining. The outer edges of the gossan show abundant iron oxides and manganese oxides. These oxides may represent former sulfides. Deep weathering of once-abundant sulfides could be the cause of the gossan. Nearby, silicified black shale and silicified dolomite contain as much as 10 percent disseminated pyrite (DiMarchi and others, 1993).

Soil and rock samples in the area contain anomalous lead and zinc, and minor silver (DiMarchi and others, 1993).

Alteration:
The Nation Gossan prospect consists of a zone of intense oxidation of pyrite along a high-angle fault zone. The center of the gossan shows pervasive silicification and chalcedonic stockwork veining (DiMarchi and others, 1993).

Age of mineralization:
The mineralization is inferred to be Late Proterozoic or younger, based on its cross-cutting relationship with the host rocks (DiMarchi and others, 1993).

Deposit model:
Carbonate-hosted Zn-Pb (Schmidt, 1997; Cox and Singer, 1986; model 32b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
32b

Production Status: None

Site Status: Active

Workings/exploration:
The Nation Gossan prospect was discovered by WGM Inc. in 1975, whose rock samples contained high lead and zinc values. In 1977, WGM Inc. ran some ground-EM traverses, but concluded that there were no significant conductors on the property. In 1993, additional soil and rock samples were collected and analyzed by ASA Inc (DiMarchi and others, 1993). This property lies on Doyon, Limited selected or conveyed land.

Production notes:

Reserves:

Additional comments:
This property lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. This site is within the Yukon-Charley Rivers National Preserve.

References:
DiMarchi and others, 1993; Schmidt, 1997.

Primary reference: DiMarchi and others, 1993

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Nation River

Site type: Occurrences

ARDF no.: CY022

Latitude: 65.359 **Quadrangle:** CY B-2

Longitude: 141.658

Location description and accuracy:

The Nation River prospect area covers about 10 square miles. The coordinates are for the center of the area, on the boundary between section 12, T. 6 N., R. 29 E., of the Fairbanks Meridian, and section 7, T. 6 N., R. 30 E., of the Fairbanks Meridian. The main mineralized area is in section 10, T. 6 N., R. 29 E., of the Fairbanks Meridian. The locations are accurate. These prospects are located within Doyon, Limited selected or conveyed land.

Commodities:

Main: Pb, Zn

Other: Cu

Ore minerals:

Gangue minerals:

Geologic description:

The Nation River area of occurrences is defined by lead and zinc soil anomalies along with lesser copper values, that are associated with an east-west-trending fault. Iron staining is intense, and there are iron-rich seepages for half a mile in section 10, T. 6 N., R. 29 E. (Doyon, Limited, 1986). The prospect area is underlain by Permian limestone, Upper Devonian Nation River Formation, and Lower Cambrian Adams Argillite and Funnel Creek Limestone. All beds strike northeast and are repeatedly folded (Doyon, Limited, 1986).

The lead and zinc anomalies may reflect leaching of mudstone, siltstone, and sandstone country rocks or of a deeper, buried sulfide body (Doyon, Limited, 1986).

Alteration:

Intense iron staining and iron-rich seepages along an east-west fault (Doyon, Limited, 1986).

Age of mineralization:

Deposit model:
Fault-controlled Zn-Pb?

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

Production Status: None

Site Status: Active

Workings/exploration:
The Nation River area has been explored by soil and rock sampling, as well as by geologic mapping (Doyon, Limited, 1986).

Production notes:

Reserves:

Additional comments:
This site is within the Yukon-Charley Rivers National Preserve. These prospects are located on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited.

References:
Doyon, Limited, 1986.

Primary reference: Doyon, Limited, 1986.

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Nugget Creek

Site type: Mines

ARDF no.: CY023

Latitude: 65.181 **Quadrangle:** CY A-3

Longitude: 142.329

Location description and accuracy:

Nugget Creek is a northeast-flowing tributary of Washington Creek and is about 3.5 miles long. The coordinates are for the main area of placer activity, in section 18, T. 4 N., R. 27 E., of the Fairbanks Meridian. The location is accurate. This creek lies within Doyon, Limited selected or conveyed land.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold, silver

Gangue minerals:

Geologic description:

The bedrock in the Nugget Creek drainage is Lower Cambrian to Middle Proterozoic Tindir Group rocks of varying sedimentary lithologies and abrupt facies changes (Dover and Miyaoka, 1988). The gold in Nugget Creek occurs as local accumulations of coarse gold on Cambrian argillite bedrock (National Park Service, 1990).

Production for Nugget Creek through 1938 was 1,772 troy ounces of gold and 302 troy ounces of silver. The largest reported nugget was a little larger than 8 ounces (National Park Service, 1990).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

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

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

39a

Production Status: Yes; small

Site Status: Active

Workings/exploration:

Nugget Creek is a site of historic placer mining, mostly prior to World War II.

Production notes:

Production for Nugget Creek through 1938 was 1,772 troy ounces of gold and 302 troy ounces of silver. The largest reported nugget was a little larger than 8 ounces (National Park Service, 1990).

Reserves:

Additional comments:

This creek lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. See also Washington Creek (CY035), Eagle Creek (CY012), Dome Creek (CY009), and Surprise Creek (CY031).

References:

Brooks, 1907 (B 314); Prindle and Mertie, 1912; Prindle, 1913; Mertie, 1938; Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: National Park Service, 1990

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Pleasant Creek

Site type: Prospects

ARDF no.: CY024

Latitude: 65.177 **Quadrangle:** CY A-1

Longitude: 141.053

Location description and accuracy:

The Pleasant Creek prospects are located in the central and southwest portion of T. 4 N., R. 33 E., of the Fairbanks Meridian. They have an irregular boundary and cover about 6 square miles. The easternmost boundary is the Canadian border, and they do not encompass VABM Pack. Coordinates are for the northernmost prospect, in section 16, T. 4 N., R. 33 E., of the Fairbanks Meridian. The location is accurate. These prospects are located within Doyon Limited selected or conveyed land.

Commodities:

Main: Pb, Zn

Other: Ag, As, Co, Cu, Sb

Ore minerals: Galena, pyrite, sphalerite

Gangue minerals: Quartz, serpentine

Geologic description:

Rock units in the prospect area are of Late Precambrian age and include a thick unit of basalt and redbeds with an interlayered sequence of massive carbonate rocks and conglomerate (DiMarchi and others, 1993). Carbonate rocks include the Pack Formation, a massive dolomite that lies unconformably over the Pleasant Creek Formation of dolomitic limestone, quartzite, and shale. Numerous facies changes and iron-rich zones characterize the prospect area. All of the units are folded along a northeast-trending anticlinal structure which is probably sympathetic to the larger scale Cathedral Creek arch. The prospect area also contains numerous northeast-trending thrust faults and two major high-angle faults, having displacements of 700 to 1,500 feet. A northeast-trending andesite dike swarm cuts across all of the map units in the area (DiMarchi and others, 1993).

The prospect hosts two types of breccia: (1) areally extensive collapse breccias related to karsting in the carbonate units; and (2) an areally limited breccia related to faulting along the margins of the andesite dikes. Small iron oxide gossans along the breccias may increase with depth. Silicification and quartz veining are common in both breccia types, and serpentine is found rarely in fractures in the dolomite (DiMarchi and others, 1993). Mineralization at Pleasant Creek consists of a breccia body of unrotated dolomite frag-

ments coated with pyrite in an open-space-fill matrix of coarse dolomite and massive pyrite; very fine grained, light colored sphalerite infilling brecciated pyrite; and late galena cubes (Andres and others, 1977).

Soil sampling, rock sampling, and geologic mapping programs have been conducted at the Pleasant Creek prospects (DiMarchi and others, 1993).

Alteration:

The alteration at the Pleasant Creek prospects includes serpentization, silicification, and quartz veining.

Age of mineralization:

Deposit model:

Plutonic-related Pb-Zn?, Carbonate-hosted Zn? (Cox and Singer, 1986; model 32b)

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

32b?

Production Status: None

Site Status: Active

Workings/exploration:

Soil sampling, rock sampling, and geologic mapping programs have been conducted at the Pleasant Creek prospects (DiMarchi and others, 1993).

Production notes:

Reserves:

Additional comments:

This property lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. This site is within the Yukon-Charley Rivers National Preserve.

References:

Andres and others, 1977; Schmidt, 1997; DiMarchi and others, 1993.

Primary reference: DiMarchi and others, 1993

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Rose Creek; Rosebud

Site type: Prospect

ARDF no.: CY025

Latitude: 65 **Quadrangle:** CY B-5

Longitude: 142

Location description and accuracy:
Rose Creek is a tributary of Coal Creek, but is not labeled on current maps. The map site is arbitrarily placed at the approximate midpoint of Coal Creek in section 3, T. 5 N., R. 22 E., of the Fairbanks Meridian, since the exact location of prospecting and (or) mining is not known. The location is accurate to within 20 miles.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:
Prospecting or mining activity was reported in 1912 along a tributary of Coal Creek (CY006) called Rose Creek (Ellsworth and Davenport, 1913). Presumably Rose Creek crosses the same Tertiary conglomerate that is the source of placer gold for other creeks in the area (Dover and Miyaoka, 1988).

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: Undetermined

Workings/exploration:

Prospecting or mining was done along the creek in 1912 (Ellsworth and Davenport, 1913).

Production notes:

Reserves:

Additional comments:

This site is within the Yukon-Charley Rivers National Preserve.

References:

Ellsworth and Davenport, 1913; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Ellsworth and Davenport, 1913

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Ruby Creek

Site type: Mine

ARDF no.: CY026

Latitude: 65.29 **Quadrangle:** CY A-3

Longitude: 143.16

Location description and accuracy:

Ruby Creek is a northeast-flowing tributary of Fourth of July Creek (CY015). It is location 7 of Cobb (1972 [MF-390]). The deposit is located midway up Ruby Creek, about a mile from its head. The placer mining occurs just upstream of the confluence with an unnamed creek entering from the southeast, in section 4, T. 3 N., R. 28 E., of the Fairbanks Meridian. The location is accurate to within one mile.

Commodities:

Main: Au

Other: Ag

Ore minerals: Gold, silver

Gangue minerals:

Geologic description:

The bedrock of Ruby Creek is composed of Cretaceous to Tertiary conglomerate and other sedimentary rocks (Dover and Miyaoka, 1988). The placer gold is found in the 20 inches of gravel above bedrock; bedrock was 12 to 15 feet from the surface in 1912 (Prindle and Mertie, 1912).

The creek was first mined in the early 1900s. Mining was by open-cut methods because the bedrock was less than 15 feet below the surface. Values of $50 to $75 per 12-foot by 12-foot sluice box were reported in the early 1900s (1901-1910 dollars). Mining operations were frequently constrained by a lack of water. In 1926, production was 5 ounces of gold and one ounce of silver (National Park Service, 1990).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

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

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

Production Status: Yes; small

Site Status: Undetermined

Workings/exploration:
The creek was first mined in the early 1900s, but more mining activity occurred in 1911. Mining was by open-cut methods because the bedrock was less than 15 feet below the surface. Mining operations were frequently constrained by a lack of water (National Park Service, 1990).

Production notes:
In 1926, production was 5 ounces of gold and one ounce of silver (National Park Service, 1990). Values of $50 to $75 per 12-foot by 12-foot sluice box were reported in the early 1900s.

Reserves:

Additional comments:
See also Fourth of July Creek (CY015). This site is within the Yukon-Charley Rivers National Preserve.

References:
Prindle and Mertie, 1912; Prindle, 1913; Chapin, 1914 (B 592); Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Prindle and Mertie, 1912

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Sam(s) Creek

Site type: Mines

ARDF no.: CY027

Latitude: 65.311 **Quadrangle:** CY B-4

Longitude: 142.872

Location description and accuracy:

Sam Creek is a northeast-flowing tributary of the Yukon River. The confluence is located in T. 6 N., R. 24 E., of the Fairbanks Meridian. Coordinates are for the cabin built near the mouth of Sam Creek (section 31, T. 6 N., R. 24 E., of the Fairbanks Meridian), although prospecting took place along the entire length of the creek. Most mining in this area was done on Ben Creek (CY003), which drains into Sam Creek about 7 miles from the mouth of Sam Creek. The location is accurate.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Sam Creek crosses Cretaceous to Tertiary sedimentary rocks that are the probable source of gold for other placers in this area (Dover and Miyaoka, 1988; Mertie, 1942). Small placer deposits have been found on the tributaries of Sam Creek, but reports of mining activity along Sam Creek may refer to its tributaries Ben Creek (CY003) and Sawyer Creek (CY028).

Prospecting along Sam Creek began in 1888, and gold was also discovered on its tributary, Ben Creek (CY003). In 1910, there were 16 men working in the area around Sam Creek (Ellsworth and Parker, 1911). Sam Creek was also re-staked in 1938 (National Park Service, 1990).

Alteration:

Age of mineralization:

Quaternary?

Deposit model:

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

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
Prospecting along Sam Creek began in 1888, and gold was also discovered on its tributary, Ben Creek (CY003). In 1910, there were 16 men working in the area around Sam Creek (Ellsworth and Parker, 1911). Sam Creek was also re-staked in 1938 (National Park Service, 1990).

Production notes:

Reserves:

Additional comments:
See also Ben Creek (CY003) and Sawyer Creek (CY028). This site is within the Yukon-Charley Rivers National Preserve.

References:
Brooks, 1907 (B 314); Ellsworth and Parker, 1911; Ellsworth and Davenport, 1913; Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Sawyer Creek; Sawyer Gulch

Site type: Mine

ARDF no.: CY028

Latitude: 65.24 **Quadrangle:** CY A-5

Longitude: 143.09

Location description and accuracy:

Sawyer Creek, not named on the current (1956, revised 1974) topographic map of the Charley River quadrangle, is a north-flowing tributary to Sam Creek, about 10 miles from its confluence with the Yukon River. Sawyer Gulch is location 6 of Cobb (1972 [MF-390]). The placer mining was in section 19, T. 5 N., R. 23 E., of the Fairbanks Meridian. The location is accurate within one mile.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

A small placer deposit was reported in the early 1900s on a tributary, presumably Sawyer Creek, of Sam Creek (CY027). The gold, as in other nearby placer deposits, is likely derived from the Cretaceous to Tertiary conglomerate that underlies the creek (Mertie, 1942; Dover and Miyaoka, 1988).

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: Undetermined

Workings/exploration:

A small placer deposit was reported in the early 1900s on Sawyer Creek. The general area was mined and explored extensively prior to World War II (Mertie, 1942).

Production notes:

Reserves:

Additional comments:

This site is within the Yukon-Charley Rivers National Preserve.

References:

Brooks, 1907 (B 314); Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Snowy Peak

Site type: Prospects

ARDF no.: CY029

Latitude: 65.665 **Quadrangle:** CY C-4

Longitude: 142.664

Location description and accuracy:

Snowy Peak, not named on the Charley River C-4 topographic map, is distinguished by VABM 'Tim', at an elevation of 4,273 feet (section 25, T. 9 N., R. 23 E., of the Fairbanks Meridian). The Snowy Peak area has three centers of prospecting activity; two are north-east of Snowy Peak, and the third is about 5 miles to the south. The northernmost one is in the NE1/4 section 26, T. 10 N., R. 24 E., of the Fairbanks Meridian. Another one is nearby in the SW1/4 section 36, T. 10 N., R. 24 E., of the Fairbanks Meridian. The third is in the SW1/4 section 8, T. 8 N., R. 24 E., of the Fairbanks Meridian. Coordinates are for the northernmost center of activity. The locations are accurate. These prospects lie on Doyon, Ltd. selected or conveyed land.

Commodities:

Main: Pb, Zn

Other:

Ore minerals:

Gangue minerals:

Geologic description:

The southern Snowy Peak prospects are underlain by Precambrian dolomite, Permian argillite, Devonian limestone, Permian Step Conglomerate, and Cretaceous Keenan Quartzite (Dover and Miyaoka, 1988). The northern Snowy Peak prospects are underlain by the Nation River Formation and Precambrian basalt. Anomalous lead and zinc values were found in soil and silt samples. The source of the anomalies is unknown. Float rocks from the southern area are very heavily iron stained (Andres and others, 1977).

Samples in the Snowy Peak prospect areas contain 470 parts per million zinc. Snowy Peak prospects have been intermittently soil and silt sampled since the mid-1970s (Doyon. Limited, 1986).

Alteration:

Age of mineralization:

Deposit model:
Carbonate-hosted Zn? (Schmidt, 1997; Cox and Singer, 1986; model 32b)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
32b?

Production Status: None

Site Status: Active

Workings/exploration:
Snowy Peak prospects have been intermittently soil and silt sampled since the mid-1970s.

Production notes:

Reserves:

Additional comments:
These prospects lie on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited.

References:
Andres and others, 1977; Doyon, Limited, 1986; Dover and Miyaoka, 1988; Schmidt, 1997; Northstar Exploration, Inc., 1999.

Primary reference: Andres and others, 1977

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Step Mountain; WK

Site type: Prospects

ARDF no.: CY030

Latitude: 65.524 **Quadrangle:** CY C-1

Longitude: 141.405

Location description and accuracy:

The Step Mountain prospects cover about 5 square miles and are located in sections 7-9, 17, 18, and 20, T. 8 N., R. 31 E., of the Fairbanks Meridian, just to the north of Step Mountain. The coordinates are for the approximate center of the area. The location is accurate. These prospects are located within Doyon, Limited selected or conveyed land.

Commodities:

Main: Pb, Zn

Other: Ag, Cd

Ore minerals: Galena, hydrozincite, smithsonite

Gangue minerals: Calcite, quartz

Geologic description:

The Step Mountain Pb-Zn prospects are in a doubly plunging antiform that forms a dome-shaped mountain. The Permian Step Conglomerate and the Nation River Formation are exposed at its core. A northwest- or west-trending fault cuts the center of Step Mountain and may host additional mineralization (Northstar Exploration, Inc., 1999). The zinc minerals consist of smithsonite, a light gray to white oxide mineral that is not believed to be an alteration product of sulfides, and hydrozincite. The lead mineral is galena (Doyon, Limited, 1986). The lead and zinc minerals are in quartz veins(?) in Permian limestone breccia zones and lenses, in fossiliferous calcareous siltstone, and in layers overlying fossiliferous calcarenite, where it locally replaces coquina in an upper packstone unit (Mosher, 1990; Schmidt, 1997). Along the crest of the anticline, the conglomerate, sandstone, and cross-cutting quartz veins contain only slightly anomalous base-metal values (Northstar Exploration, Inc., 1999).

Vitrinite reflectance data from the Devonian Nation River Formation and the Mississippian Ford Lake Shale in the Step Mountain antiform suggest that these rocks were exposed to temperatures of approximately 240 to 285 degrees Celsius (Underwood and others, 1992).

There are an estimated 35,000 to 850,000 tons of economic grade Zn, which includes 4.9 meters of 2.7 percent Zn, 3.6 meters of 18.8 percent Zn, and 40 cm of 19.7 percent Zn

(Northstar Exploration, Inc., 1999).

This prospect was discovered in the late 1970s and has been explored by short trenches and diamond drilling (Northstar Exploration, Inc., 1999).

Alteration:

Age of mineralization:

Permian or younger.

Deposit model:

Carbonate-hosted Zn-Pb (Schmidt, 1997; Cox and Singer, 1986; model 32b)

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

32b

Production Status: None

Site Status: Active

Workings/exploration:

The prospects have been examined since the late 1970s, and several short trenches and some diamond drilling have been completed (Northstar Exploration, Inc., 1999).

Production notes:

Reserves:

There are an estimated 35,000 to 850,000 tons of economic grade Zn, which includes 4.9 meters of 2.7 percent Zn, 3.6 meters of 18.8 percent Zn, and 40 cm of 19.7 percent Zn (Mosher, 1990).

Additional comments:

These prospects lie on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited.

References:

Doyon, Limited, 1986; Mosher, 1990; Underwood and others, 1992; Schmidt, 1997; Northstar Exploration, Inc., 1999.

Primary reference: Northstar Exploration, 1999

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Surprise Creek

Site type: Mines

ARDF no.: CY031

Latitude: 65.168 **Quadrangle:** CY A-3

Longitude: 142.261

Location description and accuracy:

Surprise Creek is a northwest-flowing tributary of Washington Creek (CY035). The confluence of the two creeks is located in T. 4 N., R. 27 E., of the Fairbanks Meridian. The coordinates have been placed in the area of the most extensive mining, in section 33, T. 4 N., R. 27 E., of the Fairbanks Meridian, although mining and prospecting may have taken place along other areas of the creek. The location is accurate. These mines are located within Doyon, Limited selected or conveyed land.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Placer gold was mined from Surprise Creek starting in 1906; mining continued intermittently for a few years thereafter (Mertie, 1938). The gold was presumably derived from Cretaceous to Tertiary sedimentary bedrock units (Dover and Miyaoka, 1988). Surprise Creek is one of many tributaries (CY012, CY023) of Washington Creek (CY035) that had small-scale placer production during the early 1900s.

Alteration:

Age of mineralization:

Tertiary - Quaternary?

Deposit model:

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

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

39a

Production Status: Yes; small

Site Status: Active?

Workings/exploration:

Placer gold was mined from Surprise Creek starting in 1906 and continued intermittently for a few years thereafter.

Production notes:

Total production from this creek was probably small.

Reserves:

Additional comments:

See also Washington Creek (CY035), Eagle Creek (CY012), Nugget Gulch (CY023), and Dome Creek (CY009). Surprise Creek is located on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited.

References:

Brooks, 1907 (B 314); Ellsworth and Parker, 1911; Prindle and Mertie, 1912; Prindle, 1913; Mertie, 1938; Mertie, 1942; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Mertie, 1938

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Unnamed (Tatonduk River)

Site type: Occurrence

ARDF no.: CY032

Latitude: 65.036 **Quadrangle:** CY A-1

Longitude: 141.099

Location description and accuracy:

This occurrence consists of scattered redbed outcrops for nearly 2 miles along the lower Tatonduk River and extends into the high country on both sides of the river. The outcrop area encompasses most of the northwest quarter of T. 2 N., R. 33 E., of the Fairbanks Meridian, and the southwest quarter of T. 3 N., R. 33 E., of the Fairbanks Meridian. The coordinates are for the approximate center of the outcrop area, in section 6, T. 2 N., R. 33 E., of the Fairbanks Meridian. The occurrence is location 2 of Cobb (1972; MF-0390). The location is accurate.

Commodities:

Main: Fe

Other:

Ore minerals: Hematite

Gangue minerals:

Geologic description:

This occurrence is a redbed unit of the Precambrian Tindir Group (Kimball, 1969). The Tindir Group is about 2,200 to 2,600 feet thick and in addition to the redbed unit includes argillite, shale, slate, conglomerate, extrusive volcanic rocks, and dolomitic rocks. The beds are in a monoclinal sequence that dips irregularly as much as 30 degrees west and is cut by at least one low-angle thrust fault (Mertie, 1933). Much of the cement in the redbed unit is hematite, and some beds are nearly entirely hematite (Mertie, 1933). The material is not suitable for magnetic or simple gravity separation (Kimball, 1969).

The outcrop area of the redbed unit is more than 6 square miles, and nearly 800 feet of stratigraphic thickness was sampled in 1969 (Kimball, 1969). Sample chips assayed 4.73 to 24.7 percent soluble iron. A 133-foot-thick section assayed 10 to 20 percent soluble iron, and a 200-foot-thick section assayed 21.85 percent soluble iron. These were the highest assays for the thickest sections of material.

Alteration:

Age of mineralization:
Precambrian.

Deposit model:
Superior Fe (Cox and Singer, 1986; model 34a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
34a

Production Status: None

Site Status: Probably inactive

Workings/exploration:
The Tatonduk River prospect has been known since at least 1933 and was assayed and sampled in 1969 (Kimball, 1969).

Production notes:

Reserves:

Additional comments:
This site is within the Yukon-Charley Rivers National Preserve.

References:
Mertie, 1933; Berg and Cobb, 1967; Kimball, 1969; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632).

Primary reference: Kimball, 1969

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

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

Site type: Occurrence

ARDF no.: CY033

Latitude: 65.05 **Quadrangle:** CY A-4

Longitude: 142.66

Location description and accuracy:

This occurrence is location 1 of Cobb (1972 [MF-390]). It is on a northwest-facing hillside at an elevation of about 3,100 feet, about 1.75 miles north of Fisher Creek, in section 33, T. 3 N., R. 25 E., of the Fairbanks Meridian. The coordinates are for the center of the prospect. The location is accurate to within one mile.

Commodities:

Main: Cu

Other:

Ore minerals: Azurite(?), chalcopyrite, malachite

Gangue minerals: Carbonate, quartz

Geologic description:

This unnamed occurrence is near a high-angle normal fault between Paleozoic to Precambrian pelitic schist on the south and Paleozoic phyllitic argillite on the north (Dover and Miyaoka, 1988). The occurrence consists of chalcopyrite and secondary copper minerals in quartz and carbonate veins in greenschist, greenstone, and thin carbonate layers. The vein material is estimated to be less than 3 percent of the exposed rock (Clark and Foster, 1971).

Alteration:

There is local oxidation of copper minerals.

Age of mineralization:

Deposit model:

Cu-quartz vein.

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:

The area was mapped and sampled in the mid-1970s (Clark and Foster, 1971).

Production notes:

Reserves:

Additional comments:

This site is within the Yukon-Charley Rivers National Preserve.

References:

Clark and Foster, 1971; Cobb, 1972 (MF-390); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Clark and Foster, 1971

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Mount Casca; VABM Casca

Site type: Prospects

ARDF no.: CY034

Latitude: 65.348 **Quadrangle:** CY B-1

Longitude: 141.054

Location description and accuracy:

The Mount Casca prospects are on the northern and southern flanks of 7,874-foot Mount Casca in section 13, T. 6 N., R. 32 E. Additional Mount Casca prospects are located on the southern flank of Mount Casca in section 18, T. 6 N., R. 33 E., of the Fairbanks Meridian. The prospects cover approximately 2 square miles. The coordinates are for the northernmost prospect. The locations are accurate. These prospects are located on Doyon, Limited selected or conveyed land.

Commodities:

Main: P, U

Other:

Ore minerals: Apatite, collophane

Gangue minerals:

Geologic description:

The main geologic unit in the Mount Casca area is a massive boulder-conglomerate of the Ordovician to Devonian Road River Formation (Dover and Miyaoka, 1988). The massive conglomerate is overlain by thin wedges of algal limestone of the Devonian Ogilvie Formation and underlain by the Cambrian Funnel Creek Limestone. The massive conglomerate is clast supported with an unsorted matrix. Clasts are mostly silicified oolitic limestone, chert pebbles, granular apatite, and fossil fragments. In some places, phosphate nodules as much as 5 inches in diameter were reported (DiMarchi and others, 1993). The conglomerate also contains limestone breccias.

The conglomerate contains anomalous phosphorous and uranium geochemical values. The phosphorous is located in phosphate nodules and apatite, and the uranium is in collophane and uranium-bearing apatite (DiMarchi and others, 1993). The limestone breccias contain 400 parts per million uranium, and 16.5 percent P2O5 (Doyon, Limited, 1986).

Alteration in the conglomerate appears as pervasive silicification with chalcedony-lined vugs and irregular quartz veining. Within breccia zones, many iron and manganese oxides are present (DiMarchi and others, 1993).

The Mount Casca prospect was explored by WGM Inc. in 1975 and 1976, by Union

Carbide in 1977, and by ASA Inc. in 1993. WGM Inc. conducted a soil sampling and trenching program, and Union Carbide took soil and rock samples, and also did some petrographic analysis. ASA Inc.'s program consisted of selective rock sampling and mapping of the prospect (DiMarchi and others, 1993).

Alteration:

Alteration at Mount Casca prospect consists of pervasive silicification with chalcedony-lined vugs and irregular quartz veining. Iron and manganese oxides are present within breccia zones (DiMarchi and others, 1993).

Age of mineralization:

Cambrian or younger, based on the age of the host rocks.

Deposit model:

Upwelling-type phosphate deposit? (Cox and Singer, 1986; model 34c)

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

34c?

Production Status: None

Site Status: Active

Workings/exploration:

The Mount Casca prospects were explored by WGM Inc. in 1975 and 1976, by Union Carbide in 1977, and by ASA Inc. in 1993. WGM Inc. conducted a soil sampling and trenching program, and Union Carbide took soil and rock samples and also did some petrographic analysis. ASA Inc.'s program consisted of selective rock sampling and mapping of the prospect (DiMarchi and others, 1993).

Production notes:

Reserves:

Additional comments:

This prospect lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. This site is within the Yukon-Charley Rivers National Preserve.

References:

Doyon, Limited, 1986; Dover and Miyaoka, 1988; DiMarchi and others, 1993.

Primary reference: DiMarchi and others, 1993

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Washington Creek

Site type: Mines

ARDF no.: CY035

Latitude: 65.19 **Quadrangle:** CY A-3

Longitude: 142.29

Location description and accuracy:

Washington Creek is a northward-flowing tributary of the Yukon River. The mines' coordinates are arbitrarily placed at the confluence with Nugget Creek (section 8, T. 4 N., R. 27 E., of the Fairbanks Meridian). The exact locations of the placer gold deposits are unknown, but prospecting took place along the entire length of Washington Creek. The location is accurate to within 8 miles. The main portion of this creek is located within Doyon, Limited selected or conveyed land.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Traces of gold have been found along Washington Creek, but all of the productive placer mines, such as Nugget Creek (CY023), Dome Creek (CY009), Surprise Creek (CY031), and Eagle Creek (CY012) are along tributaries of Washington Creek (Mertie, 1942). The bedrock along middle and lower Washington Creek includes Mesozoic shale, argillite, and quartzite, and Precambrian basalt and red beds. Cretaceous and Tertiary sandstone and conglomerate, as well as Precambrian metamorphic rocks are found near the head of the creek (Dover and Miyaoka, 1988). The traces of gold that might be found in the creek are most likely derived from the conglomerate, but all of the productive mining was on the tributaries (Mertie, 1942).

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: Active

Workings/exploration:
Prospecting was done along the creek starting in the early 1900's. Some gold was found in Washington Creek, but all of the productive mining took place on tributaries of Washington Creek.

Production notes:

Reserves:

Additional comments:
This creek lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. See also: Nugget Creek (CY023), Eagle Creek (CY012), Dome Creek (CY009), and Surprise Creek (CY031).

References:
Brooks, 1905; Prindle, 1906 (B 295); Brooks, 1907 (B 314); Prindle and Mertie, 1912; Prindle, 1913; Mertie, 1942; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Waterfall Creek

Site type: Prospect

ARDF no.: CY036

Latitude: 65.38 **Quadrangle:** CY B-1

Longitude: 141.05

Location description and accuracy:

The Waterfall Creek prospect area encompasses about 20 square miles; the approximate center of the area is in section 29, T. 6 N., R. 32 E., of the Fairbanks Meridian. The coordinates are for the most mineralized portion of the prospect area, which trends north-northeast through the center of section 1, T. 6 N., R. 32 E., of the Fairbanks Meridian. This location is accurate to within one mile. This prospect is located within Doyon, Limited selected or conveyed land.

Commodities:

Main: Zn

Other: Mo, Pb

Ore minerals: Pyrite

Gangue minerals: Quartz

Geologic description:

The Waterfall Creek prospect is underlain by northwest-dipping, Upper Proterozoic to Lower Cambrian Tindir Group rocks (redbeds, basalt, limestone, and conglomerate), which transition northwestward into black chert, green siltstone, and quartzite (DiMarchi and others, 1993). The Waterfall Creek thrust separates the Tindir Group from a Cambrian through Permian sedimentary sequence which lies to the west. Bedding in this area generally strikes north-northeast and dips from 80SE to 55NW (DiMarchi and others, 1993).

Minor fine-grained disseminated pyrite is present in altered basalt and siltstone units. Alteration consists mostly of chloritization of basalt and oxidation of cherts and siltstones. Iron oxides are found locally, most of them in clasts of breccia which is hosted by silicified limestone or quartzite. White quartz veins and drusy quartz veinlets and vuggy fillings are also common in brecciated rocks (DiMarchi and others, 1993).

Soil and stream sediment samples taken by WGM Inc. and by ASA Inc. are anomalous in zinc in the prospect area. Weak anomalies of molybdenum and lead were also found (DiMarchi and others, 1993).

Alteration:

Alteration at the Waterfall Creek prospect consists of chloritization of the basalt, iron oxide in breccia clasts in silicified limestone or quartzite, and quartz veins and vug fillings (DiMarchi and others, 1993).

Age of mineralization:

Permian or younger.

Deposit model:

Fault-controlled Zn?

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

Production Status: None

Site Status: Active

Workings/exploration:

WGM Inc. conducted a soil and rock sampling program on the property in the mid-1970s, and in 1993 ASA Inc. conducted a soil and rock sampling program and geologic mapping. The property is located on Doyon, Limited selected or conveyed land.

Production notes:

Reserves:

Additional comments:

This prospect is located on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. This site is within the Yukon-Charley Rivers National Preserve.

References:

DiMarchi and others, 1993.

Primary reference: DiMarchi and others, 1993

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Webber Creek; Weber Creek

Site type: Prospects

ARDF no.: CY037

Latitude: 65.3 **Quadrangle:** CY B-6

Longitude: 143.7

Location description and accuracy:

Webber Creek is a northeast-flowing tributary of the Yukon River. The confluence is in T. 7 N., R. 20 E., of the Fairbanks Meridian. Webber Creek is about 20 miles long and has been prospected along its entire length. The coordinates have been arbitrarily placed at the approximate midpoint of the creek, in section 29, T. 6 N., R. 20 E., of the Fairbanks Meridian. The location is accurate to within 10 miles.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

The bedrock in Webber Creek near Alder Creek (CY001) consists of Paleozoic phyllitic argillite; farther downstream the bedrock is composed of Cretaceous to Tertiary sedimentary rocks (Dover and Miyaoka, 1988).

No extensive placer deposits have been reported along Webber Creek, and no commercial placer mining has taken place. However, a northwest-flowing tributary of Webber Creek, Alder Creek (CY001), has had some ground worked (Mertie, 1942).

Gold Placers, Inc. did some test drilling along the Webber Creek in the mid 1930's, but did not find good results. In 1975, a cabin was built along Webber Creek and a road was bulldozed to its mouth (National Park Service, 1990).

Alteration:

Age of mineralization:

Quaternary?

Deposit model:

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

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

Production Status: None

Site Status: Probably inactive

Workings/exploration:
There has been some exploration along Webber Creek, most of it prior to World War II. No placer mines have ever operated along Webber Creek (Mertie, 1942).

Production notes:

Reserves:

Additional comments:
See also Alder Creek (CY001). This site is within the Yukon-Charley Rivers National Preserve.

References:
Mertie, 1942; Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988; National Park Service, 1990.

Primary reference: Mertie, 1942

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Woodchopper Creek Area; Alluvial Golds Inc.; Alluvial Placers, Inc.; Anna May; Aztec; Joe; Bennett; Bodacious; Charles; Comet; Cordova; Florence; Gold Medal; Gladys; Gold Star; Kelly; Herbert; Holstrom; Hunky Dory; Mary Flow; Seward Assn.; Sioux; Snowbird; State; Sunshine; Valdez

Site type: Mine

ARDF no.: CY038

Latitude: 65.304 **Quadrangle:** CY B-5

Longitude: 143.289

Location description and accuracy:

The Woodchopper Creek basin and the area surrounding it cover approximately 55 square miles. Tributaries to Woodchopper Creek include Dome Creek (CY010), Mineral Creek (CY020), Moore Creek (CY016), and Iron Creek (CY019). The coordinates for the Woodchopper Creek mine are located in the center of the placer workings marked on the Charley River (B-5) quadrangle topographic map, in section 34, T. 6 N., R. 21 E., of the Fairbanks Meridian. The principal placer mining activity was about 1.25 miles upstream and downstream from this point. The location is accurate.

Commodities:

Main: Au

Other: Ir, Pt

Ore minerals: Gold, gold-platinum alloys, iridium

Gangue minerals:

Geologic description:

The headwaters of Woodchopper Creek are underlain by Precambrian to Paleozoic metamorphic rocks that are intruded by Mesozoic(?) granitic plutons. The creek flows across a belt of Cretaceous to Tertiary conglomerate and other sedimentary rocks (Brabb and Churkin, 1969; Dover and Miyaoka, 1988). Gold placers are found in or immediately downstream from this belt. The proximal source of the gold is likely the conglomerate, but the ultimate source is probably the older metamorphic rocks upstream (Prindle and Mertie, 1912). Platinum metals are alloyed with the gold, and monazite is also present. In the 1912 workings, the depth to the conglomerate bedrock was about 22 feet; about 11 feet of this was gravel that contained many granite boulders (Prindle and Mertie, 1912). In 1942, the mean of 6 assays from the creek was 932 parts Au per thousand, and 62 parts Ag per thousand. One sample assayed 0.42 percent Pt with a trace of Ir (Mertie,

1942).

Gold was discovered in 1902, or possibly earlier; mining and exploration continued intermittently in the area until 1964. In 1910, the gold output for the area was about $20,000 (1910 dollars) (Cobb, 1973; B 1374).

Alteration:

Age of mineralization:
Quaternary.

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

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

Production Status: Yes; medium

Site Status: Probably inactive

Workings/exploration:
Gold was discovered in 1902, or possibly earlier, and mining and exploration continued intermittently in the area until 1964, when the dredge that had been operating since 1937 shut down.

Production notes:
Gold output for 1910 was estimated to be about $19,000 (1910 dollars) for the Woodchopper Creek area. For 1909, gold production was estimated to be about $20,000 (1909 dollars) (Cobb, 1976 [OFR 76-632]).

Reserves:

Additional comments:
See also Mineral Creek (CY020), Alice Gulch (CY002), Dome Creek (CY010), and Iron Creek (CY019). This site is within the Yukon-Charley Rivers National Preserve.

References:
Brooks, 1903; Purington, 1905; Prindle and Mertie, 1912; Ellsworth and Davenport, 1913; Mertie, 1938; Mertie, 1942; Bates and Wedow, 1953; Overstreet, 1967; Brabb and Churkin, 1969; Cobb, 1972 (MF-390); Cobb, 1973 (B 1374); Cobb, 1976 (OFR 76-632); Dover and Miyaoka, 1988.

Primary reference: Cobb, 1976 (OFR 76-632)

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Casca Basin

Site type: Prospects

ARDF no.: CY039

Latitude: 65.383 **Quadrangle:** CY B-1

Longitude: 141.245

Location description and accuracy:
The Casca Basin covers an area of about 36 square miles. The coordinates for the prospects are placed in the approximate center, at the intersection of T. 6 N., and T.7 N., of the Fairbanks Meridian, and R. 31 E. and R. 23 E., of the Fairbanks Meridian. The location is accurate. The Casca Basin area lies on Doyon, Ltd. selected or conveyed land.

Commodities:

Main: U

Other:

Ore minerals: Pyrite

Gangue minerals:

Geologic description:
The bedrock near the Casca Basin prospects consists of Paleocene coal-bearing continental clastic sedimentary rocks that lie east of the Proterozoic to Precambrian Tindir Group (Northstar Exploration, Inc., 1999). Pyrite is common in clay partings and coal seams. The sedimentary section locally has above-background radiation levels, suggesting the presence of uranium or other radioactive elements. The section has tuffaceous partings, and minerals within the tuff may be the source of any such uranium. If so, this is probably a sandstone uranium or roll-front deposit (Northstar Exploration, Inc., 1999).

Alteration:

Age of mineralization:
The mineralization is Paleocene or younger, based on the age of the host rocks.

Deposit model:
Roll-front uranium? (Cox and Singer, 1986; model 30c).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
30c?

Production Status: None

Site Status: Active

Workings/exploration:

The Casca Basin area has been explored by surface methods, including soil and silt sampling, since the mid-1970s (Northstar Exploration, Inc., 1999).

Production notes:

Reserves:

Additional comments:

The Casca Basin area lies on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited.

References:

Dover and Miyaoka, 1988; Northstar Exploration, Inc., 1999.

Primary reference: Northstar Exploration, Inc., 1999

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

Site name(s): Three Castle Mountain

Site type: Prospects

ARDF no.: CY040

Latitude: 65.226 **Quadrangle:** CY A-1

Longitude: 141.199

Location description and accuracy:

The Three Castle Mountain prospects are in two areas, one north of the mountain, and one southwest of it. The Three Castle Mountain North prospects are located in section 29 and 32, T. 5 N., R. 32 E., of the Fairbanks Meridian, and the Three Castle Mountain West prospects are located in sections 8 and 9, T. 4 N., R. 32 E., of the Fairbanks Meridian. Latitude and longitude coordinates are for the Three Castle Mountain North prospects. These prospects are located on Doyon, Limited selected or conveyed land. The locations are accurate.

Commodities:

Main: Pb, Zn

Other: Ag, U

Ore minerals: Pyrite

Gangue minerals:

Geologic description:

The Three Castle Mountain area is underlain by limestone, shale, and dolomite from the upper Tindir Supergroup (Dover and Miyaoka, 1988). The Three Castle Mountain prospects lie 7 miles southwest of the Nation Gossan prospects (CY021); they exhibit the same type of mineralization and may be part of the same system (Northstar Exploration, Inc., 1999).

The Three Castle Mountain prospects consist of northeast-trending gossans that are associated with sulfide mineralization in limestone fault breccias that may be thrust breccias. Lead, zinc, and silver anomalies are common in soil samples, with lead and zinc values ranging from 1,000-10,000 parts per million, and silver ranging from 0.1 to 0.5 ounces per ton. A dolomite sample with secondary silica and traces of pyrite also contained 3.25 parts per million uranium (Northstar Exploration, Inc., 1999).

The Three Castle Mountain area has been explored since the mid-1970s by soil and rock sampling.

Alteration:

Gossans and local silicification of limestone, along a northeast-trending fault.

Age of mineralization:
Proterozoic or younger.

Deposit model:
Fault-controlled Zn-Pb?

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

Production Status: None

Site Status: Active

Workings/exploration:
The area has been explored since the mid-1970's by soil and rock sampling.

Production notes:

Reserves:

Additional comments:
These prospects are located on Doyon, Limited selected or conveyed land. For more information, contact Doyon, Limited. This site is within the Yukon-Charley Rivers National Preserve.

References:
Schmidt, 1997; Northstar Exploration, Inc., 1999.

Primary reference: Northstar Exploration, Inc., 1999

Reporter(s): C.E. Cameron (ADGGS)

Last report date: 4/7/00

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