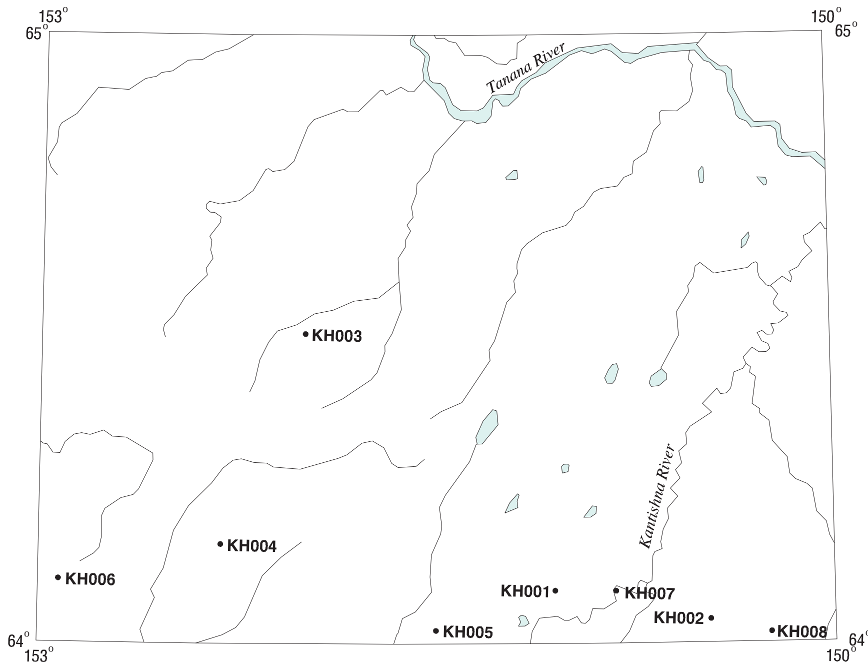
Alaska Resource Data File

Kantishna 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 Kantishna River 1:250,000-scale quadrangle, Alaska

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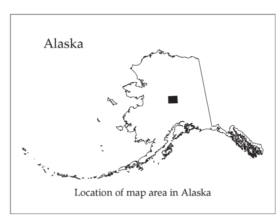

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OPEN-FILE REPORT 00-289

Site name(s): Bearpaw Mountain

Site type: Prospects

ARDF no.: KH001

Latitude: 64.087 **Quadrangle:** KH A-3

Longitude: 151.053

Location description and accuracy:

The Bearpaw Mountain prospects are found within a 2-square-mile area, low on the west flank of Bearpaw Mountain. The approximate center of the prospect area is in SW1/4SE1/4 section 34, T. 9 S., R. 18 W., of the Fairbanks Meridian. The Kantishna River is approximately 2 miles to the south, and there is an airstrip at Lake Minchumina approximately 35 miles southwest of the prospects. The Bearpaw Mountain prospects are located on land selected by or conveyed to Doyon, Limited.

Commodities:

Main: Sn

Other:

Ore minerals:

Gangue minerals: Quartz

Geologic description:

Bearpaw Mountain is composed of a two-mica granite stock (Doyon, Limited, 1998) intruding hornfelsed shale, schist, and siltstone (Bond, 1985). The shale, schist, and siltstone are of Ordovician to Silurian age, and the granite is Cretaceous to Tertiary (Chapman and Yeend, 1981). The granite outcrops on the west flank of Bearpaw Mountain cover approximately 2 square miles. The granite is coarse grained, vuggy, and cut in many places by numerous tourmaline-bearing aplite dikes. The granite is interpreted to be similar to tin granites in the Seward Peninsula (Bond, 1985). Regionally, the area contains a system of northeast-trending strike-slip and related conjugate faults, associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993).

The prospects consist of vein and stockwork quartz in hornfels adjacent to the granite. As much as 1 percent limonitic voids and rare, blue-gray sulfide wisps are found in the quartz. Limited sampling identified quartz veins with as much as 15 ppm Sn (Bond, 1985). Limited outcrop suggests detrital tin placers and other tin bearing zones may be found with the granite (Bond, 1985).

A regional stream sediment sampling and mapping program in 1975-77 and 1980 identified geochemical anomalies (Bond, 1985). In 1981, an airborne radiometric survey was conducted. In 1985, exploration consisted of mapping and collecting 12 rock chip samples (Bond, 1985). There are no indications of production.

Alteration:

Age of mineralization:

Veins are syn- or post-Cretaceous to Tertiary intrusion.

Deposit model:

Plutonic-related mesothermal veining.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

A regional stream sediment sampling and mapping program in 1975-77 and 1980 identified geochemical anomalies (Bond, 1985). In 1981, an airborne radiometric survey was conducted. In 1985, exploration consisted of mapping and collecting 12 rock chip samples (Bond, 1985).

Production notes:

There are no indications of production.

Reserves:

Additional comments:

The Bearpaw Mountain prospects are located on land selected by or conveyed to Doyon, Limited. For more information, contact Doyon, Limited.

References:

Eakin, 1918; Cobb, 1977 (OFR 77-168B); Chapman and Yeend, 1981; Cobb and Chapman, 1981; Bond, 1985; Clautice and others, 1993; Doyon Limited, 1998

Primary reference: Bond, 1985

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

Site name(s): Chitsia Creek

Site type: Prospect

ARDF no.: KH002

Latitude: 64.039 **Quadrangle:** KH A-1

Longitude: 150.469

Location description and accuracy:

Chitsia Creek drains northwest into the Kantishna River. The creek is roughly 21 miles long and has several tributaries. The Alaska Division of Mining Kardex file system reports placer claims on Chitsia Creek north of Chitsia Mountain. The approximate center of mining activity on Chitsia Creek is in NE1/4NW1/4 section 22, T. 10 S., R. 15 W., of the Fairbanks Meridian, at an elevation of about 700 feet. There are references to additional placer mining along Chitsia Creek, but it is unclear where. The Chitsia Creek prospect is located on land selected by or conveyed to Doyon, Limited.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

Along Chitsia Creek, north of Chitsia Mountain, the geologic units are Miocene to Pliocene Nenana gravels overlain by unconsolidated Quaternary silt and colluvium. The Nenana gravels consist of weakly consolidated pebble conglomerate and thin-bedded sandstone and claystone (Chapman and Yeend, 1981). Regionally, the area contains a system of northeast-trending strike-slip and related conjugate faults associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993).

Float collected from Chitsia Creek, north of Chitsia Mountain, consisted of quartz-muscovite schist, white bull quartz with iron-oxide, and biotite-feldspar-quartz gneiss (Bond, 1985). A pan concentrate from Chitsia Creek assayed by the acid digestion method contained 340 ppb Au, 60 ppm Cu, 10 ppm Pb, 170 ppm Zn, 3 ppm Mo, 20 ppm As, and 10 ppm W (Bond, 1985).

Placer gold was discovered in the stream gravels of Chitsia Creek by George Wickersham during the 1903 expedition to Mt. McKinley (Bundtzen and others, 1976). There are no indications of production.

Alteration:

Age of mineralization:
Quaternary?

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

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Placer gold was first discovered in the stream gravels of Chitsia Creek by George Wickersham during the 1903 expedition to Mt. McKinley (Bundtzen and others, 1976). The area was later mapped by Chapman and Yeend (1981).

Production notes:
There are no indications of production.

Reserves:

Additional comments:
The Chitsia Creek prospect is located on land selected by or conveyed to Doyon, Limited. For more information, contact Doyon, Limited.

References:
Bundtzen and others, 1976; Cobb, 1977 (OFR 77-168B); Chapman and Yeend, 1981; Cobb and Chapman, 1981; Bond, 1985; Clautice and others, 1993.

Primary reference: Bond, 1985

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

Site name(s): Cosna Dome

Site type: Prospects

ARDF no.: KH003

Latitude: 64.509 **Quadrangle:** KH C-4

Longitude: 151.997

Location description and accuracy:

The Cosna Dome Pb-Ag and Sn prospects are situated on a 2,026-foot-high rounded hill on the north flank of the Bitzshtini Mountains. The approximate center of the 1-square-mile area that contains the two prospects is in NE1/4SW1/4 section 6, T. 5 S., R. 22 W., of the Fairbanks Meridian. The Pb-Ag prospect is situated along a west-flowing tributary of the Cosna River that drains the southwest side of hill 2,026. The Sn prospect is situated at the top of hill 2,026. The Cosna Dome prospects are accessible by the Cosna River and an airstrip, 1,100 feet long, on the south flank of the dome.

Commodities:

Main: Ag, Pb, Sn

Other: Au, Cu, Sb, Zn

Ore minerals: Arsenopyrite, cassiterite, chalcopyrite, galena, pyrite, sphalerite, stibnite

Gangue minerals: Chlorite, quartz, sericite, tourmaline

Geologic description:

The Cosna Dome area is characterized by low rounded hills having less than 1 percent outcrop (Burleigh, 1989 [OFR 11-89]). The country rocks are Precambrian to Cambrian quartzite, metasiltstone, slate, phyllite, and grit (Chapman and others, 1975). Regionally, the area contains a system of northeast-trending strike-slip and related conjugate faults associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993). The Cosna Dome prospects are sparsely intruded by thin aplitic dikes (Burleigh, 1989 [OFR 11-89]).

The Pb-Ag prospect is characterized by numerous east-trending subparallel zones of limonite-stained vuggy quartz veins in open-space fractures. The quartz veins contain hydrothermal sericite and various combinations of galena, chalcopyrite, pyrite, sphalerite, and stibnite. Massive galena samples from two prospect pits contained 65 to 147 ounces Ag per ton. A cobble of stibnite from a trench contained 0.7 ppm Hg, 0.8 ppm Ag, and 68.95 percent Sb. Some of the best assays of galena yield 71percent Pb, 91.3 ounces Ag per ton, and 0.06 percent Sn. A pan concentrate from gravels downstream of the prospect contained 7 ppm Ag, and 1,150 ppm Pb (Burleigh, 1989 [OFR 11-89]).

The Sn prospect is characterized at the surface by subtle linear benches and depressions trending approximately 145 degrees. These benches and depressions contain brecciated graywacke with irregular quartz stringers, goethite-limonite gossan, and some quartz-tourmaline veining. An iron-stained quartz-veined breccia sample contained 45 ppm Ag, 830 ppm Sn, 2,200 ppm Pb, and 181 ppm As. A sample consisting of gossan and quartz-chlorite veins crosscutting a massive quartz lens contained 54 ppm Ag, 5,800 ppm Pb, 897 ppm As, 0.320 ppm Au, and less than 200 ppm Sn. A zone of dense gossan material contained 20,000 ppm Sn, 110 ppm Ag, 2,130 ppm As, and 3,950 ppm Pb. Regional stream-sediment sampling has found detrital cassiterite. A pan concentrate from gravels downstream of the prospect contained 0.090 ppm Au, less than 5 ppm Ag, 2,100 ppm Sn, and 195 ppm Pb (Burleigh, 1989 [OFR 11-89]).

The regional northeast-trending fault and plutonic system that characterizes Cosna Dome and the Bitzshtini Mountains also characterizes Haystack Mountain (KH004) approximately 20 miles southwest and the Chitanatala Mountains to the north and northwest. Silberman and others (1978) determined a K-Ar biotite age of 64.2 plus or minus 1.9 Ma for the pluton on Haystack Mountain, and a K-Ar biotite age of 91.3 plus or minus 2.7 Ma and a K-Ar hornblende age of 92.5 plus or minus 2.8 Ma for the pluton in the Chitanatala Mountains. Results of airborne radiometric and magnetic surveys of the Bitzshtini Mountains are similar to the geophysical expression of the Haystack Mountain pluton and associated hornfels. Burleigh (1989 [OFR 11-89]) interprets the Bitzshtini Mountains, including Cosna Dome, as the surface expression of an aureole of hornfels around a shallow, unexposed pluton with high-level felsic dikes and Pb-Ag-Sn mineralization.

It is reported that Tom Arnstrom first discovered lode cassiterite at the head of a gulch on the northwest flank of Cosna Dome. It is unclear what year the discovery occurred. Using information supplied by Arnstrom, Charles Holky prospected the area for tin (Burleigh, 1989 [OFR 11-89]). Holky reported good prospects of placer cassiterite in the headwaters of the Cosna River (Joesting, 1943). Holky and Colbert discovered lead and silver vein mineralization at the Pb-Ag prospect and hand-dug a 100-foot adit, three trenches, and several prospecting pits. The U.S. Bureau of Mines conducted a brief examination, consisting of rock, soil, and pan concentrate sampling, of the Pb-Ag and Sn prospects in 1964 and a follow up Cu-Pb-Zn soil survey in 1966. In 1980, the Department of Energy completed 1:250,000-scale airborne radiometric and magnetic reconnaissance surveys for the region. During and after 1985, Charles Woodruff conducted various trenching operations and constructed a 1,100-foot airstrip on Cosna Dome. There is no reported production for the Cosna Dome Pb-Ag and Sn prospects (Burleigh, 1989 [OFR 11-89]).

Alteration:

Burleigh (1989 [OFR 11-89]) reported sericite flakes in the vein material and wall rock, indicating hydrothermal alteration.

Age of mineralization:

The vein mineralization is most likely related to mid- to Upper Cretaceous plutonism in the Bitzshtini Mountains similar to that in the nearby Haystack Mountain and Chitanatala Mountains (Burleigh, 1989 [OFR 11-89]).

Deposit model:
Plutonic related mesothermal, Sn veins (?) (Cox and Singer, 1986; model 15b).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
15b?

Production Status: None

Site Status: Inactive

Workings/exploration:
It is reported that Tom Arnstrom first discovered lode cassiterite at the head of a gulch on the northwest flank of Cosna Dome. It is unclear what year the discovery occurred. Using information supplied by Arnstrom, Charles Holky prospected the area for tin (Burleigh, 1989 [OFR 11-89]). Holky reported good prospects of placer cassiterite in the headwaters of the Cosna River (Joesting, 1943). Holky and Colbert discovered lead and silver vein mineralization at the Pb-Ag prospect and hand-dug a 100-foot adit, three trenches, and several prospecting pits. The U.S. Bureau of Mines conducted a brief examination, consisting of rock, soil, and pan concentrate sampling, of the Pb-Ag and Sn prospects in 1964 and a follow up Cu-Pb-Zn soil survey in 1966. In 1980, the Department of Energy completed 1:250,000 scale airborne radiometric and magnetic reconnaissance surveys for the region. During and after 1985, Charles Woodruff conducted various trenching operations and constructed an 1,100-foot airstrip on Cosna Dome (Burleigh, 1989 [OFR 11-89]).

Production notes:
There is no reported production for the Cosna Dome Pb-Ag and Sn prospects (Burleigh, 1989 [OFR 11-89]).

Reserves:

Additional comments:

References:
Joesting, 1943; Chapman and others, 1975; Cobb, 1977 (OFR 77-168B); Silberman and others, 1979; Cobb and Chapman, 1981; Burleigh, 1989 (OFR 11-89); Patton and others, 1989; Clautice and others, 1993.

Primary reference: Burleigh, 1989 (OFR 11-89)

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

Site name(s): Haystack Mountain

Site type: Prospects

ARDF no.: KH004

Latitude: 64.163 **Quadrangle:** KH A-5

Longitude: 152.314

Location description and accuracy:

The Haystack Mountain prospects cover about 15 square miles and are situated in the numerous streams draining Haystack Mountain. The approximate center of the prospect area is in NW1/4SW1/4 section 5, T. 9 S., R. 24 W., of the Fairbanks Meridian. The North Fork Kuskokwim River provides access to the Haystack Mountain prospects. The southern half of Haystack Mountain, located within T. 9 S., R. 24 W., is situated on land selected by or conveyed to Doyon, Limited.

Commodities:

Main: Au

Other: As, Sn, W, Zn

Ore minerals:

Gangue minerals:

Geologic description:

Haystack Mountain is composed of a quartz monzonite stock (Silberman and others, 1978) intruding hornfelsed chert, siltstone, mudstone, and argillite. The sedimentary rocks are of Ordovician to Late Devonian age (Chapman and Yeend, 1981). Sillberman and others (1978) determined a K-Ar biotite age of 64.2 plus or minus 1.9 Ma for the intrusive rock from Haystack Mountain. Regionally, the area contains a system of northeast-trending strike slip and related conjugate faults associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993).

Pan concentrates collected from several streams draining the northwest, southwest, and northeast sides of Haystack Mountain contain as much as 1,650 ppb Au, 20 ppm Sn, and 135 ppm W. Stream-sediment samples contained up to 40 ppb Au, 7 ppm Sn, and 10 ppm W (Bond, 1985). A pan concentrate from a north-draining stream contained 13 ppm As, 28 ppm W, 120 ppm La, 250 ppm Ce, 29 ppm Th, and 105 ppm Sn. Two rock chip samples of gossan material contained up to 430 ppm Zn, 105 ppm Cu, 109 ppm As, 8,898 ppm Mn, and 190 ppm Sn (Clautice and others, 1993). Bond (1985) reported rock chip samples from buff-colored hornfels and black graphitic schist that contained as much as 15 ppb Au. A sample of calc-silicate hornfels contained 100 ppb Au and 776 ppm As

(Clautice and others, 1993). No mineralization was observed in the Haystack Mountain quartz monzonite (Bond, 1985).

A regional stream sediment sampling, airborne radiometrics, and mapping program in 1975-76 identified several anomalies (Bond, 1985). There are no indications of production.

Alteration:

Age of mineralization:

Probably related to Early Tertiary plutonism.

Deposit model:

Plutonic-related mesothermal veining.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

A regional stream sediment sampling, airborne radiometrics, and mapping program in 1975-76 identified several anomalies (Bond, 1985). In 1985, 2 rock chip, 10 stream sediment, and 7 pan concentrate samples were collected (Bond, 1985).

Production notes:

There are no indications of production.

Reserves:

Additional comments:

The southern half of Haystack Mountain, located within T. 9 S., R. 24 W., of the Fairbanks Meridian, is situated on land selected by or conveyed to Doyon, Limited. For more information, contact Doyon, Limited.

References:

Eakin, 1918; Cobb, 1977 (OFR 77-168B); Silberman and others, 1979; Chapman and Yeend, 1981; Cobb and Chapman, 1981; Bond, 1985; Clautice and others, 1993.

Primary reference: Bond, 1985

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

Site name(s): Roosevelt Hills

Site type: Prospects

ARDF no.: KH005

Latitude: 64.022

Quadrangle: KH A-4

Longitude: 151.502

Location description and accuracy:

The Roosevelt Hills prospects cover about 10 square miles and are situated on the southeast flank of a rounded hill, locally termed hill 1910. The approximate center of the prospect area is in SW1/4SE1/4 section 29, T. 10 S., R. 20 W., of the Fairbanks Meridian. The Kantishna River flows within 11 miles, and there is an airstrip at Lake Minchumina approximately 30 miles southwest of the prospects. The Roosevelt Hills are situated on land selected by or conveyed to Doyon, Limited and in the Denali National Preserve.

Commodities:

Main: Ag, Sn

Other: As, Bi, Cu, Mn, Mo, Pb, U, W, Zn

Ore minerals: Pyrite

Gangue minerals: Coronodite, fluorite, quartz, sericite, tourmaline

Geologic description:

The Roosevelt Hills are composed of an elliptical, east-trending, muscovite-biotite granite stock and hornfelsed, pelitic schists (Burleigh, 1989 [DLR 90-24]). The age of the schist is unknown; the granite is Tertiary in age (Bond, 1985). The granite underlies several rounded hills and an adjacent eroded basin, covering approximately 10 square miles (Burleigh, 1989 [DLR 90-24]). Bond (1985) reported that the stock comprises early to late intrusive phases of granite, semi-porphyritic granite, equigranular granite, aplite, and quartz-tourmaline veins. The Roosevelt Hills stock is interpreted to be a deeply weathered, calc-alkaline, peraluminous granite (Burleigh, 1989 [DLR 90-24]). Regionally, the area contains a system of northeast-trending strike-slip and related conjugate faults associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993).

The prospects consist of silicified-sericitized shear zones in the granite. One such zone, about 70 feet long and 30 feet wide, contains a black coating in vugs and on joint surfaces. According to x-ray fluorescence analysis, this coating is coronodite: (Mn, Pb) Mn_3O_7. (Burleigh, 1989 [DLR 90-24]) inferred that the coating could be from downward-percolating supergene fluids. Assays from the coronodite-bearing shears contained as much as 5,000 ppm Sn, 39.7 ppm Ag, 20,013 ppm Mn, and 2,688 ppm Pb (Burleigh, 1989 [DLR 90-24]). Bond (1985) reports that assays from the same zone contain 61percent Pb, 1,600 ppm Cu, 6,500 ppm Zn, 300 ppm Mo, 300 ppm As, 785 ppm Sn, and 60 ppm W. Adjacent areas with no coronodite coating contain as much as 3,100 ppm Pb, 500 ppm Zn, 16 ppm Mo, 7 ppm Ag, 1,400 ppm As, 6,800 ppm Sn, and 105 ppm W (Bond, 1985). In the northern half of the granite, widely spaced sets of coarse drusy quartz veins, 0.1 to 3 feet wide, trend 15 to 150 degrees and dip 70 degrees. According to x-ray fluorescence, these veins contain as much as 110 ppm Sn, with minor pyrite. Late-stage veins contain purple fluorite (Burleigh, 1989 [DLR 90-24]). Bond (1985) reported a rock chip that contained 12,600 ppm Sn. Pan concentrates from streams draining the granite contain as much as 4,200 ppm Sn, 9 ppm Pb, 66 ppm Zn, 9.8 ppm As, and 6 ppm U (Burleigh, 1989 [DLR 90-24]). Burleigh (1989 [DLR 90-24]) reported that the upper portions of the granite, which commonly contain large amounts of Sn, have been eroded. There are numerous alluvial deposits in the area with potential for Sn placers.

Regional stream sediment sampling with airborne radiometrics in 1975-76 identified geochemical anomalies (Bond, 1985). In 1977, exploration efforts consisted of a scintillometer survey, mapping, and a stream sediment, rock chip, and soil sampling grid. Additional stream-sediment, rock chip, and water sampling was completed in 1980 (Bond, 1985). In 1981, an airborne radiometric program was conducted. Further rock chip sampling occurred in 1984. In 1985, two days of rubble and outcrop sampling identified hill 1910 as a Sn-rich zone in the granite (Bond, 1985). (Burleigh, 1989 [DLR 90-24]) conducted mapping activities and collected 18 rock chip and 10 pan concentrate samples. There are no indications of production.

Alteration:

Numerous shear zones in granite are silicified and sericitized and contain a black coating in vugs and on joint surfaces. According to x-ray fluorescence analysis, this coating is coronodite: (Mn, Pb)Mn3O7. Burleigh (1989 [DLR 90-24]) inferred that the coating could be from downward-percolating supergene fluids.

Age of mineralization:

Veins cut Tertiary intrusion.

Deposit model:

Shear-hosted veining, lower portion of Sn greisen deposits(?) (Cox and Singer, 1986; model 15c).

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

15c?

Production Status: None

Site Status: Inactive

Workings/exploration:

Regional stream sediment sampling with airborne radiometrics in 1975-76 identified geochemical anomalies (Bond, 1985). In 1977, exploration efforts consisted of a scintillometer survey, mapping, and a stream sediment, rock chip, and soil sampling grid. Additional stream-sediment, rock chip, and water sampling was completed in 1980 (Bond, 1985). In 1981, an airborne radiometric program was conducted. Further rock chip sampling occurred in 1984. In 1985, two days of rubble and outcrop sampling identified hill 1910 as a Sn-rich zone in the granite (Bond, 1985). Burleigh (1989 [DLR 90-24]) conducted mapping activities and collected 18 rock chip and 10 pan concentrate samples.

Production notes:

There are no indications of production.

Reserves:

Additional comments:

The Roosevelt Hills are situated on land selected by or conveyed to Doyon, Limited. For more information, contact Doyon, Limited. The site is also in Denali National Preserve.

References:

Eakin, 1918; Cobb, 1977 (OFR 77-168B); Chapman and Yeend, 1981; Cobb and Chapman, 1981; Bond, 1985; Burleigh, 1989; Clautice and others, 1993.

Primary reference: Burleigh, 1989 (DLR 90-24)

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

Site name(s): Sischu Mountain

Site type: Prospects

ARDF no.: KH006

Latitude: 64.104 **Quadrangle:** KH A-6

Longitude: 152.923

Location description and accuracy:

The Sischu Mountain prospects cover about 20 square miles, including Sischu Mountain and several surrounding peaks. The approximate center of the prospect area is in NE1/4SW1/4 section 30, T. 9 S., R. 27 W., of the Fairbanks Meridian. There is an airstrip at Lake Minchumina approximately 30 miles southeast of the prospects. The Sischu Mountain prospects are located on land selected by or conveyed to Doyon, Limited.

Commodities:

Main: Sn

Other: As, Au, Bi, Cu, Mn, Mo, Ni, Sb, Zn, Zr

Ore minerals: Chalcopyrite, magnetite, pyrite

Gangue minerals: Chlorite, goethite, kaolinite, quartz, tourmaline

Geologic description:

Sischu Mountain is composed of multiple igneous phases intruding phyllite, limestone, and siltstone to the north and various volcanic rocks, including rhyolite, dacite, andesite, and basalt, to the south and east (Chapman and Yeend, 1981). The phyllite, limestone, and siltstone are of Devonian age, and the intrusive rocks are Cretaceous to Tertiary (Chapman and Yeend, 1981). Float mapping has found aplite, coarse biotite granite, porphyry granite, hornblende-biotite monzodiorite, and porphyry dikes (Bond, 1985). Regionally, the area contains a system of northeast-trending strike-slip and related conjugate faults associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993).

On Sischu Mountain, float samples exhibit silicification and chlorite-kaolinite alteration and vein brecciation with tourmaline. Disseminated pyrite and chalcopyrite occur in altered intrusive rock. Some aplite dikes contain as much as 1 percent magnetite. An area identified by a color anomaly consists of hydrothermally brecciated sandstone fragments in a goethite matrix. A rock chip of altered granite contained as much as 1,450 ppm As, 25 ppm Bi, 100 ppm Sn, and 15 ppm Mo (Bond, 1985). Clautice and others (1993) reported analyses of several samples: (1) a rhyolite dike cutting limestone contained as much as 1,200 ppm Zr, 86 ppm Cu, 542 ppm Zn, 265 ppm Ni, 136 ppm As, 35 ppm Sb, 799 ppm Mn, and 10 ppm Sn; (2) limestone near a granitic contact contained as much as 114 ppm As; (3) equigranular, biotite monzonite contained 767 ppm Zn, 47 ppm As, 23 ppm Pb, and 6 ppm Sn; (4) a rhyolite dike in limestone contained 132 ppm As, 590 ppm Mn, and 38 ppm Pb; and (5) limonitic rhyolite contained 105 ppm As and 463 ppm Mn.

A regional stream sediment sampling, airborne radiometrics, and mapping program in 1975-76 and 1980 identified several anomalies. In 1984, one sample was collected. In 1985, exploration efforts consisted of mapping and collecting 12 rock chip, 7 stream sediments, and 8 pan concentrate samples (Bond, 1985). There are no indications of production.

Alteration:

On Sischu Mountain, float samples exhibit silicification and chlorite-kaolinite alteration and vein brecciation with tourmaline. An area identified by a color anomaly consists of hydrothermally brecciated sandstone fragments in a goethite matrix.

Age of mineralization:

Probably related to Cretaceous to Tertiary plutonism.

Deposit model:

Plutonic-related mesothermal veining.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

A regional stream sediment sampling, airborne radiometrics, and mapping program in 1975-76 and 1980 identified several anomalies. In 1984, one sample was collected. In 1985, exploration efforts consisted of mapping and collecting 12 rock chip, 7 stream sediments, and 8 pan concentrate samples (Bond, 1985). There are no indications of production.

Production notes:

There are no indications of production.

Reserves:

Additional comments:

The Sischu Mountain prospects are located on land selected by or conveyed to Doyon, Limited. For more information, contact Doyon, Limited.

References:

Eakin, 1918; Cobb, 1977 (OFR 77-168B); Chapman and Yeend, 1981; Cobb and Chapman, 1981; Bond, 1985; Clautice and others, 1993.

Primary reference: Bond, 1985

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

Site name(s): Unnamed (east of Bearpaw Mountain)

Site type: Prospects

ARDF no.: KH007

Latitude: 64.086

Quadrangle: KH A-2

Longitude: 150.824

Location description and accuracy:

These two unnamed prospects cover about 1 square mile and are situated on the northwest bank of the Kantishna River about 5 miles east of Bearpaw Mountain (KH001). The approximate center of the prospect area is in SW1/4SE1/4 section 35, T. 9 S., R. 17 W. The Kantishna River provides access to the prospects, and there is an airstrip at Lake Minchumina approximately 40 miles southwest. The unnamed prospects are located on land selected by or conveyed to Doyon, Limited.

Commodities:

Main: Cu, Zn

Other:

Ore minerals:

Gangue minerals:

Geologic description:

The bedrock in the area is Ordovician to Silurian siltstone, mudstone, argillite, grit, quartzite, and limestone, and minor amounts of chert and schist (Chapman and Yeend, 1981). Regionally, the area contains a system of northeast-trending strike-slip and related conjugate faults associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993).

Black shale crops out on the northwest bank of the Kantishna River. At the prospect sites, the black shale contains brecciated zones along low-angle faults. Bond (1985) reported that these brecciated zones contain weak Zn-Cu mineralization.

A regional stream-sediment sampling and mapping program in 1975-76 identified geochemical anomalies (Bond, 1985). There are no indications of production.

Alteration:

Age of mineralization:

Brecciation is younger than Silurian to Ordovician metasedimentary rocks, probably related to Cretaceous to Tertiary plutonism.

Deposit model:
Shear-hosted brecciation.

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

Production Status: None

Site Status: Inactive

Workings/exploration:
A regional stream-sediment sampling and mapping program in 1975-76 identified geochemical anomalies (Bond, 1985).

Production notes:
There are no indications of production.

Reserves:

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

References:
Eakin, 1918; Cobb, 1977 (OFR 77-168B); Chapman and Yeend, 1981; Cobb and Chapman, 1981; Bond, 1985; Clautice and others, 1993.

Primary reference: Bond, 1985

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

Site name(s): Unnamed (near Chitsia Mountain)

Site type: Occurrences

ARDF no.: KH008

Latitude: 64.003 **Quadrangle:** KH A-1

Longitude: 150.245

Location description and accuracy:

Three unnamed occurrences are situated on a rounded hill approximately 3 miles northwest of Chitsia Mountain. The approximate center of the 1/2 square mile area that contains the three occurrences are NE1/4SW1/4 section 35, T. 10 S., R. 14 W., of the Fairbanks Meridian. The nearest settlement is Bearpaw, which can be accessed by the Kantishna River and a sled road from Nenana. It is locality 1 of Cobb and Chapman (1981), who summarized relevant references under the name 'Unnamed occurrence'.

Commodities:

Main: Ag, Pb

Other: Au, Zn

Ore minerals: Galena

Gangue minerals: Quartz

Geologic description:

The Chitsia Mountain area is underlain by Middle Devonian to Early Mississippian Totatlanika Schist (Wilson and others, 1998). This formation consists of slightly metamorphosed volcanic sedimentary rocks, including various phyllites, silicified greenschist, and nonresistant greenschist tuffs. It is intruded by resistant porphyro-aphanitic rhyolite (Bundtzen and others, 1976). Regionally, the area contains a system of northeast-trending strike-slip and related conjugate faults associated with Cretaceous to Tertiary plutonic rocks and coeval or younger volcanic rocks (Clautice and others, 1993).

The three occurrences consist of a quartz vein system trending N55E and dipping 55 degrees SE, hosted in the rhyolite. The quartz veins locally contain limonite and galena. A sulfide-bearing quartz vein sample was assayed by atomic absorption and contained 0.05 ounces Ag per ton, 0.01 ounces Au per ton, less than 0.01 percent Cu, 0.01percent Pb, 0.02 percent Zn, less than 0.01 percent Mo, and less than 0.01percent Sb. A stream-sediment sample collected near the rhyolite was assayed by atomic absorption and contained 0.03 ppm Au, 34 ppm Cu, 24 ppm Pb, 125 ppm Zn, and 1.10 ppm Ag (Bundtzen and others, 1976). These areas of base-metal vein mineralization in rhyolite are interpreted to have potential for large low-grade and smaller high-grade metallic deposits

(Bundtzen and others, 1976). There are no indications of production.

Alteration:

Age of mineralization:

Younger than the Middle Devonian to Early Mississippian Totatlanika Schist; probably related to Cretaceous to Tertiary plutonism.

Deposit model:

Plutonic-related mesothermal, shear-hosted veining.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

There are no indications of production.

Reserves:

Additional comments:

References:

Chapman, 1975; Bundtzen and others, 1976; Chapman and Yeend, 1981; Cobb and Chapman, 1981; Clautice and others, 1993, Wilson and others, 1998.

Primary reference: Bundtzen and others, 1976

Reporter(s): Cameron S. Rombach (ADGGS)

Last report date: 11/8/99

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