Alaska Resource Data File, Noatak quadrangle, Alaska

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Open-File Report 2006-1157

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Alaska Resource Data File

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

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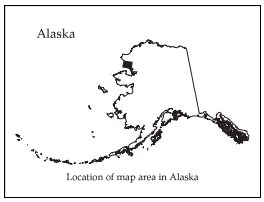

OPEN-FILE REPORT 2006-1157

Site name(s): Unnamed (on Iyikrok Mountain)

Site type: Occurrences

ARDF no.: NT001

Latitude: 67.9493 **Quadrangle:** NT D-4

Longitude: 163.6117

Location description and accuracy:
This site consists two large occurrences and 20 smaller occurrences spread over an area about 6 miles in diameter that makes up the highlands of Iyikrok Mountain. The coordinates are approximately the center of the mafic-ultramafic complex on Iyikrok Mountain, about 0.5 miles southwest of the center of Section 36, T. 30 N., R. 22 W., of the Kateel River Meridian.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:
Chromite occurs in peridotite and/or dunite of the lyikrok mafic-ultramafic complex (Foley and others, 1985.). The two larger occurrences are a banded zone about 80 by 300 feet in area with 3-4 percent chromite and a banded zone about 30 by 1,000 in area with 3 to 4 percent chromite. Lower grade material possibly extends for 3,000 feet from both occurrences. The chromite bands are generally 1 to 2 inches thick, but may be up to 8 feet thick. The chrome/iron ratios are 2.8 to 3.1. More than 20 smaller occurrences of chromite are reported but were not measured.

Foley and others (1985) estimated that the zone of chromite-bearing rocks about 80 by 350 feet in area contains 5,000 to 12,000 tons of chromic oxide. The zone about 300 by 100 feet in area contains 139,000 to 371,000 tons of chromic oxide. The total estimated reserve potential is 194,000 to 383,000 tons of chromic oxide.

Alteration:

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a)

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status: None

Site Status: Inactive

Workings/exploration:
Surface sampling and mapping only.

Production notes:

Reserves:

Foley and others (1985) estimated that the zone of chromite-bearing rocks about 80 by 350 feet in area contains 5,000 to 12,000 tons of chromic oxide. The zone about 300 by 100 feet in area contains 139,000 to 371,000 tons of chromic oxide. The total estimated reserve potential is 194,000 to 383,000 tons of chromic oxide.

Additional comments:

References:

Foley and others, 1985.

Primary reference: Foley and others, 1985

Reporter(s): J. M. Schmidt and J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

Site name(s): Unnamed (in the Maiyumerak Mountains)

Site type: Occurrence

ARDF no.: NT002

Latitude: 67.7832 **Quadrangle:** NT D-1

Longitude: 162.0334

Location description and accuracy:
These occurrences are in an area of about 36 square miles approximately centered in the northern half of the Maiyumerak Mountains. The center is near the northwest corner of section 34, T. 28 N., R. R 15 W., of the Kateel River Meridian.

Commodities:

Main: Cu

Other: Zn

Ore minerals: Chalcopyrite, pyrite

Gangue minerals:

Geologic description:
Minor amounts of pyrite and chalcopyrite occur widely over an area of about 36 square miles in this part of the Asik Mountain mafic-ultramafic complex which is as much as 60 miles long and 25 miles wide (Degenhart and others, 1978). Serpentine and dark green to black basalt with amygdules filled with calcite and epidote are the most common rock types. The serpentine commonly contains small amounts of fine-grained pyrite as disseminations and fracture fillings. The weathering of pyrite produces large orange- to red-stained areas on outcrops and along streams. A minor amount of malachite was noted on occasional calcite fillings in the basalt, and very minor chalcopyrite is associated with the serpentinite.

Sixty-six stream sediment, soil, and rock samples were collected over an area of about 36 square miles and were analyzed for copper and nickel, and in some cases for lead, zinc, silver, and chromium (Degenhart and others, 1978). Seven stream sediment, silt, and soil samples had copper values above 250 parts per million (ppm) copper; six of these were attributed to minor amounts of chalcopyrite associated with serpentinite and basalt and were not considered significant (Degenhart and others, 1978). One sample from Uvgoon Creek contained 1,400 ppm copper, and 2,075 ppm zinc. Zn. No bedrock is exposed at this site; stream float consists mainly of pyritic serpentinite and diorite(?). The anomalous values of copper and zinc in this sample could not be explained. and were considered worthy of follow-up studies.

Alteration:

Age of mineralization:

Deposit model:
Minor chalcopyrite in serpentine of a mafic-ultramafic complex.

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

Production Status: None

Site Status: Inactive

Workings/exploration:
The area was examined in the late 1970's and 66 samples were collected and analyzed.

Production notes:

Reserves:
None.

Additional comments:
The area is now within the Noatak National Preserve and Wilderness area is is closed to mining and exploration.

References:
Degenhart and others, 1978; Cobb and others, 1981.

Primary reference: Degenhart and others, 1978

Reporter(s): J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

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

Site type: Occurrence

ARDF no.: NT003

Latitude: 67.6200 **Quadrangle:** NT C-3

Longitude: 163.4154

Location description and accuracy:
This occurrence consists of outcrop in Rabbit Creek at an elevation of about 500 feet. It is about 6.2 miles southeast of Igiglogruk Mountain, about 0.3 mile south of the center of Section 28, T. 26 N., R. 21 W., of the Kateel River Meridian. The location is accurate within 1/2 mile.

Commodities:

Main: Co, Cu

Other:

Ore minerals: Bornite, chalcopyrite, hematite, pyrite

Gangue minerals: Quartz

Geologic description:
This occurrence consist of a 4-inch-thick sulfide-bearing quartz vein with iron and copper staining and about a dozen sulfide-quartz boulders (as much as 4 feet wide by 6.3 feet long) that contain pods, wisps, and bands of hematite, pyrite, chalcopyrite, and minor bornite (Barker and Roberts, 1985). The host rock is gray to green, crenulated phyllite of the Devonian to Permian(?) Mississippian Endicott Group. Grab samples average 3.13 percent copper and 0.034 percent cobalt. The highest grade sample contained 6.7 percent copper, 0.153 percent cobalt, and 11.0 parts per million silver.

Alteration:

Age of mineralization:
Devonian or younger based on the age of the host rock.

Deposit model:
Quartz vein and stratiform sulfides.

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Only limited surface sampling.

Production notes:

Reserves:
None.

Additional comments:

This occurrence is now with the Cape Krusenstern National Monument which is closed to mining and mineral exploration.

References:

Barker and Roberts, 1985.

Primary reference: Barker and Roberts, 1985

Reporter(s): J. M. Schmidt and J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

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

Site type: Occurrence

ARDF no.: NT004

Latitude: 67.6294 **Quadrangle:** NT C-3

Longitude: 163.3992

Location description and accuracy:
This occurrence consists of float boulders collected in Rabbit Creek at an elevation of about 600 feet. The occurrence is about 6.2 miles southeast of Igiglogruk Mountain near the northeast corner of Section 28, T. 26 N., R. 21 W., of the Kateel River Meridian. The location is accurate.

Commodities:

Main: Au, Cu, Pd, Pt

Other:

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

Gangue minerals:

Geologic description:
Rounded boulders and cobbles of layered, possibly cumulate, gabbroic to troctolitic mafic rocks, variably altered, contain sulfide minerals and anomalous values of platinum group metals (Mowatt and Jansons, 1985). The sulfides include chalcopyrite, bornite, covellite, pyrite, and pyrrhotite. Five sulfide-bearing samples of altered mafic rocks contained 412 to 1,406 parts per billion (ppb), 343 to 892 ppb palladium, and up to 309 ppb Au and 3,000 parts per million Cu. The bedrock source for these boulders is unknown but presumably is one of the mafic-ultramafic complexes of the western Brooks Range.

Alteration:
Noted but not identified.

Age of mineralization:

Deposit model:
Cu-Ni-PGE in mafic rocks from a mafic-ultramafic complex.

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited sampling by government geologists in the early 1980's.

Production notes:

Reserves:
None.

Additional comments:

This occurrence is now within the Cape Krusenstern National Monument which is closed to mining and mineral exploration.

References:

Mowatt and Jansons, 1985.

Primary reference: Mowatt and Jansons, 1985

Reporter(s): J. M. Schmidt and J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

Site name(s): Rabbit Creek

Site type: Occurrence

ARDF no.: NT005

Latitude: 67.6692 **Quadrangle:** NT C-3

Longitude: 163.3776

Location description and accuracy:
The occurrence is located near the head of Rabbit Creek at an elevation of about 825 feet; it is about 0.3 mile northeast of the center of Section 10, T. 26 N., R. 21 W., of the Kateel River Meridian. The location is accurate.

Commodities:

Main: Ag, Pb, Zn

Other:

Ore minerals: Galena, pyrite, sphalerite

Gangue minerals:

Geologic description:
Stratiform(?) base metal mineralization occurs in light-gray- and tan-weathering phyllite of the Devonian to Permian(?) Endicott Group. The occurrence was found by a mineral exploration firm working for NANA Regional Corporation, Inc., and briefly noted by the U.S. Bureau of Mines (1980). One sample with 3 percent pyrite contained 2.5 percent lead, 0.85 percent zinc, and 4.5 ounces of silver per ton.

Alteration:

Age of mineralization:
Devonian to Permian based on the age of the host rock.

Deposit model:
Stratiform Ag-Pb-Zn deposit.

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

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited sampling by a exploration company.

Production notes:

Reserves:
None.

Additional comments:
This occurrence is now within the Cape Krusenstern National Monument which is closed to mining and

mineral exploration.

References:

U.S. Bureau of Mines, 1980.

Primary reference: U.S. Bureau of Mines, 1980

Reporter(s): J. M. Schmidt and J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

Site name(s): Unnamed (southwest of Asik Mountain); Sours Creek

Site type: Occurrence

ARDF no.: NT006

Latitude: 67.4201 **Quadrangle:** NT B-1

Longitude: 162.4799

Location description and accuracy:

The coordinates of this occurrence are at a location about 4.6 miles southwest of Asik Mountain near hill 840, and about 0.5 miles east of the center of Section 5, T. 23 N., R. 17 W., of the Kateel River Meridian. However the location was derived from a small-scale sketch map in Saunders (1955) and is probably only accurate to within 2 miles. Sanders described this locality as 'at about 1,000 feet altitude on the east side of the ridge,' and mentioned a similar exposure about 0.5 mile to the southwest. These occurrences may overlap or be the same as the occurrences nearby at ARDF NT008 on Asik Mountain; both have similar mineralization and are in the same mafic-ultramafic complex.

Commodities:

Main: Cr

Other:

Ore minerals: Chromite

Gangue minerals:

Geologic description:

This site consists of two locations on Asik Mountain, each with two and perhaps more chromite bands, 2 to 5 cm thick, in dark-colored mafic rock of the Asik Mountain mafic-ultramafic complex (Sanders, 1955). The bands are well defined and have the appearance of narrow veins. The chromite bands are in blocks of rock that are probably not in place. Sanders noted that the chromite-bearing material at this locality is too narrow and too low-grade to be mined profitably. Two samples from the northeast most of the two localities contained 6.64 percent chromium and 10.19 percent iron and 5.56 percent chromium and 12.25 percent iron. Foley and others (1985) reported 8.2 percent and 9.6 percent chromic oxide in two samples.

Alteration:

Age of mineralization:

Deposit model:

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

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

8a

Production Status: None

Site Status: Inactive

Workings/exploration:

Only limited surface sampling.

Production notes:

Reserves:
None.

Additional comments:
The occurrence is now within the Noatak National Preserve which is closed to exploration and mining. This occurrence has been called 'Sours Creek' although this name is not currently shown on the USGS topographic map.
This is MAS/MILS number 0020260001.

References:
Saunders, 1955; Foley and others, 1985.

Primary reference: Saunders, 1955

Reporter(s): J. M. Schmidt and J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

Site name(s): Unnamed (on Asik Mountain)

Site type: Occurrences

ARDF no.: NT007

Latitude: 67.4502 **Quadrangle:** NT B-1

Longitude: 162.4171

Location description and accuracy:
The main occurrence is about 2.0 miles southwest of the summit of Asik Mountain near hill 1370. A second, more minor occurrence is near the top of Asik Mountain. The main occurrence is near the center of Section 27, T. 23 N., R. 16 W., of the Kateel River Meridian. The occurrences are accurate to within one mile.

Commodities:

Main: Cr, Fe

Other: Cu, Ni, Pt-group

Ore minerals: Chromite, magnetite

Gangue minerals:

Geologic description:
Disseminated chromite and magnetite occur widely in dunite of the ultramafic body at Asik Mountain (Degenhart and others, 1978). The body has poorly defined layering. The structure in the area is complex, but generally it appears that the pluton has intruded carbonate rocks of Paleozoic, possibly Devonian, age. The contact appears to be nearly conformable, suggesting that the intrusive may be sill-like.

The dunite often contains up to 2 percent disseminated chromite and analyses of samples show contain minor amounts of copper, nickel, and platinum-group elements. Two anomalous areas of chromium on Asik Mountain were outlined by soil samples; samples from these areas contained more than 600 parts per million (ppm) chromium and 450 ppm nickel (versus background values of less than 200 ppm chromium and 100 ppm nickel). Degenhart and others (1978) collected one sample of pyritic syenodiorite on the west side of Asik Mountain that contained more than 500 ppm copper (Degenhart and others, 1978). They also describe a 'modest buildup of chromium and nickel' in tan to brown weathered dunite near the southwestern part of Asik Mountain and a 'lesser chromium buildup' associated with peridotite at the peak of Asik Mountain.

Alteration:

Age of mineralization:

Deposit model:
Podiform chromite (Cox and Singer, 1986; model 8a).

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):
8a

Production Status: None

Site Status: Inactive

Workings/exploration:
Limited surface and soil sampling in the late 1970's.

Production notes:

Reserves:
None.

Additional comments:
The occurrence is now within the Noatak National Preserve which is closed to exploration and mining.

References:
Degenhart and others, 1978; Cobb and others, 1981.

Primary reference: Degenhart and others, 1978

Reporter(s): J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

Site name(s): Unnamed (south of Asik Mountain)

Site type: Occurrence

ARDF no.: NT008

Latitude: 67.4000 **Quadrangle:** NT B-1

Longitude: 162.3498

Location description and accuracy:
This occurrence is about 4.8 miles south of Asik Mountain and about 0.4 mile south of the center of Section 12, T. 23 N., R. 17 W., of the Kateel River Meridian. The location is accurate.

Commodities:

Main: F

Other:

Ore minerals: Fluorite

Gangue minerals: Calcite

Geologic description:
Little is known about this occurrence other than purple fluorite occurs in calcite veinlets that cross-cut gray limestone of Paleozoic, probably Devonian, age (Cobb and others, 1981).

Alteration:

Age of mineralization:

Deposit model:
Fluorite in calcite veinlets.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:
None.

Additional comments:
This occurrence is now within the Noatak National Preserve which is closed to mining and mineral exploration.

References:
Cobb and others, 1981.

Primary reference: Cobb and others, 1981

Reporter(s): J. M. Schmidt and J.A. Dumoulin (U.S. Geological Survey)

Last report date: 10/14/96

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