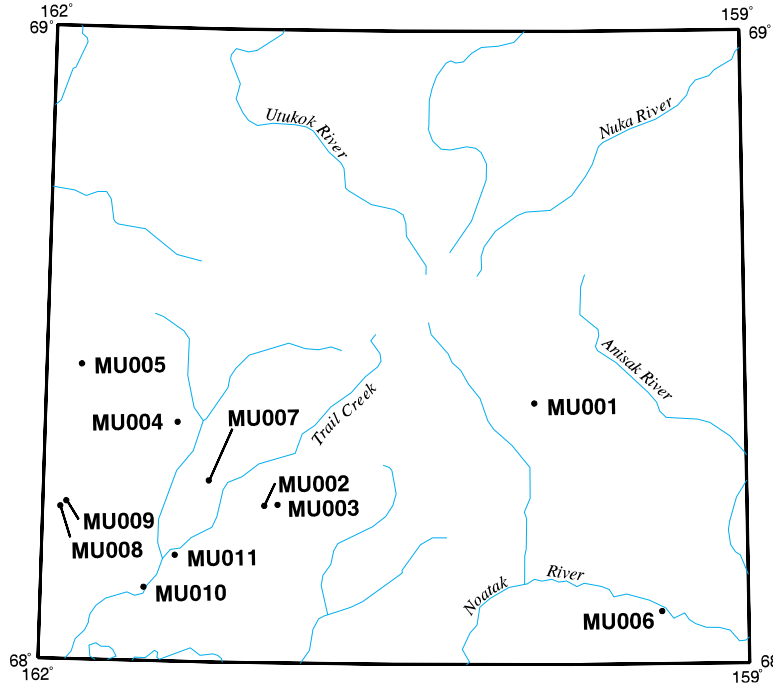


U.S. Department of the Interior - U.S. Geological Survey

Misheguk Mountain quadrangle

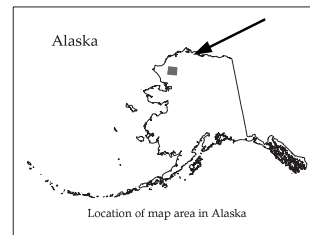
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences throughout Alaska.



Distribution of mineral occurrences in the Misheguk Mountain 1:250,000-scale quadrangle, northwestern Alaska

This and related reports are accessible through the USGS World Wide Web site <http://www-mrs-ak.wr.usgs.gov/ardf>. Comments or information regarding corrections or missing data, or requests for digital retrievals should be directed to the author(s) of this compilation:

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



Site: Nimiuktuk**Type:** Prospect**ARDF no.** MU001**Latitude:** 68.41**Quadrangle:** MU B-2**Longitude:** 159.91**Location description and accuracy:**

Located on low ridge 1.5 mi (2.4 km) west of confluence of Klim Creek and Nimiuktuk River; located to within 1 mi (1.6 km).

Commodities:**Main:** Ba**Other:****Ore minerals:** Barite**Gangue minerals:****Geologic description:**

Small hill about 23-33 ft (7-10 m) high, 130 ft (40 m) wide, and 197 ft (60 m) long surrounded by tundra is made up of cobble and boulder size fragments of massive barite. The nearest bedrock exposure is 1640 ft (500 m) northeast and consists of low rubbly outcrops of Upper Mississippian black chert and shale in contact with Lower Cretaceous shale and wacke. Outcrops 1970 ft (600 m) southwest of deposit are Upper Mississippian volcanic rocks (K-Ar age 333 +/- 17 m.y.) and sandy limestone of the Mississippian Utukok formation. Volcanic rocks probably were originally dacite or andesite. Utukok formation rocks mapped as part of a higher thrust sheet and unrelated to barite deposit.

Alteration:**Workings/Exploration:**

Alaska's Mineral Industry, 1995 (p. 62) reports widespread stream-sediment Ba anomalies in area indicate further barite potential.

Age:

Late Mississippian?

Deposit model:

Lode; barite

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

31b

Production: No**Status:** Inactive**Production notes:****Reserves:**

'Alaska's Mineral Industry, 1995' (p.62) reports deposit estimated to contain at least 1.36 million tonnes (1.5 million tons) of barite.

Additional comments:

See MAS/MILS Sequence #0020190008, U.S. Bureau of Mines (1995)

References:

Mayfield and others, 1979, OFR 79-1092; Mayfield and others, 1979, C 804-B; Cobb and others, 1981, OFR 81-767A; U.S. Bureau of Mines, 1995; Bundtzen and others, 1996

Primary reference: Mayfield and others, 1979, OFR 79-1092

Reporter: M.T. Powers; D.F. Huber; J.M. Schmidt, J.H. Dover

Reporter affiliation: USGS

Last report date: 10/22/92

Site: Misheguk Mountain--west**Type:** Occurrence**ARDF no.** MU002**Latitude:** 68.25**Quadrangle:** MU A-4**Longitude:** 161.06**Location description and accuracy:**

Location plotted is midway between localities 229 and 231 of Degenhart and others (1978, fig. 8); about 1 mi (1.6 km) northeast of Misheguk Mountain summit; located to within 1 mi (1.6 km).

Commodities:**Main:** Cr, Platinum-group elements (PGE)**Other:** Ni**Ore minerals:** Chromite, garnierite?**Gangue minerals:****Geologic description:**

Chromite, along with a greenish mineral tentatively identified as garnierite, occurs in discontinuous bands less than an inch (25.4 mm) wide, small pods, and disseminations in part of a large serpentized dunite-peridotite body. Misheguk Mountain is part of an ultramafic body approximately 32 miles long in a northeastern direction and about 13 miles wide. It is part of an ophiolite complex composed of a central core of the serpentized ultramafic and gabbroic rocks flanked on three sides by mafic volcanic and intrusive rocks of Jurassic, Triassic, and(or) Permian age.

Alteration:**Workings/Exploration:**

Assay values of 4.3% Cr and 0.22% Ni were obtained by the U.S. Bureau of Mines (Degenhart and other, 1978, p. 126, 232-40, 491) over a 50 ft sample length. Also, chromite pods in dunite and pyroxenite contained up to 0.123 troy oz/st (4200 ppb Ir, 45 ppb Os, 360 ppb Rh, 98 ppb Ru, and 14 ppb Au. Plagioclase peridotite containing accessory pyrrhotite assayed up to 0.004 troy oz/st Pd and 0.005 troy oz/st Pt, and dunite contained 0.001 troy oz/st (42 ppb) Pt, 22 ppb Pd, 1 ppb Ir, and 6 ppb Rh. Sperrylite and argentite were identified by Scanning Electron Microscope analysis of a PGE-rich iron-rich chromian spinel sample.

Age:

Jurassic?

Deposit model:

Lode; podiform chromite

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

8a

Production: No**Status:** Inactive**Production notes:****Reserves:**

Additional comments:

Additional work is required to test the entire ultramafic body for significant occurrences of chromium, nickel, asbestos, and platinum. See MAS/MILS Sequence # 0020190022 (U.S. Bureau of Mines, 1995)

References:

Degenhart and others (1978); Cobb and others, 1981, OFR 81-767A; Grybeck, 1977; ADGGS, 1989; U.S. Bureau of Mines, 1995

Primary reference: Degenhart and others (1978)

Reporter: M.T. Powers; D.F. Huber; J.M. Schmidt; J.H. Dover

Reporter affiliation: USGS

Last report date: 9/24/96

Site: Misheguk Mountain--east**Type:** Occurrence**ARDF no.** MU003**Latitude:** 68.25**Quadrangle:** MU A-4**Longitude:** 161**Location description and accuracy:**

Location plotted encompasses MAS/MILS Sequence #'s 0020190002-4 (U.S. Bureau of Mines, 1995); and localities 228, 233, 236, and 238 of Degenhart and others (1978, fig. 1); 1-2 mi (1.6-3.2 km) east of and on opposite (south) side of canyon from MU002; located to within 1 mi. (1.6 km).

Commodities:**Main:** Asbestos, Cr, Cu?**Other:****Ore minerals:** Chromite**Gangue minerals:****Geologic description:**

Rubble sample of serpentinite containing bands and disseminations of chromite, presumably from underlying mafic-ultramafic complex.

Alteration:**Workings/Exploration:**

One sample contains up to .22% nickel and 7.5% chromium (Degenhart, 1978, p. 236).

Age:**Deposit model:**

Lode; podiform chromite

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

8a

Production: No**Status:** Inactive**Production notes:****Reserves:****Additional comments:**

See MAS/MILS Sequence #'s 0020190002-4 (U.S. Bureau of Mines, 1995)

References:

Degenhart and others (1978); U.S. Bureau of Mines, 1995

Primary reference: Degenhart and others (1978)**Reporter:** J.H. Dover**Reporter affiliation:** USGS**Last report date:** 9/24/96

Site: Kagvik Creek**Type:** Occurrence**ARDF no.** MU004**Latitude:** 68.38**Quadrangle:** MU B-5**Longitude:** 161.43**Location description and accuracy:**

Location plotted is Kagvik Creek of Churkin and others (1978, fig. 3); on ridge about 7 mi (11.2 km) north of confluence of Kagvik Creek and Kugururok River; located to within 2 mi (3.2 km).

Commodities:**Main:** Bentonite**Other:** Ba, Gypsum(?)**Ore minerals:** Barite, gypsum**Gangue minerals:****Geologic description:**

Prominent iron-stained, yellow clay (bentonite?) horizon contains local sparse barite and gypsum?; at contact between intensely deformed dark chert and shale of the Carboniferous Lisburne group and maroon and gray shale of the overlying Siksikpuk formation.

Alteration:

Iron-oxide stain

Workings/Exploration:

Contains 1000-3000 ppm Ba (Churkin and others, 1978, p.20).

Age:

Carboniferous

Deposit model:

Lode; stratiform

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**Production:** No**Status:** Inactive**Production notes:****Reserves:****Additional comments:****References:**

Churkin and others (1978); Cobb and others, 1981, OFR 81-767A

Primary reference: Churkin and others (1978)**Reporter:** M.T. Powers; D.F. Huber; J.M. Schmidt**Reporter affiliation:** USGS**Last report date:** 10/22/92

Site: Inaccessible Ridge**Type:** Occurrence**ARDF no.** MU005**Latitude:** 68.47**Quadrangle:** MU B-5**Longitude:** 161.85**Location description and accuracy:**

Location plotted is Inaccessible Ridge locality of Churkin and others (1978, fig. 3); on continuation of Inaccessible Ridge on southwest side of westernmost fork at head of Kagvik Creek and about 0.5 mi (0.8 km) northeast of hill 3770; within 2 mi (3.2 km).

Commodities:**Main:** Ba, Cu**Other:****Ore minerals:** Barite, malachite**Gangue minerals:****Geologic description:**

Malachite stains on fractures and marcasite nodules in tightly folded Triassic chert; yellow clay partings in chert near contact between intensely folded and faulted Lisburne Group and Siksikpuk Formation.

Alteration:

Iron and copper staining

Workings/Exploration:

Contains 700 to more than 5000 ppm Ba (Churkin and others, 1978, p.20, 30-31).

Age:

Mississippian (barite)

Deposit model:

Lode; stratiform

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**Production:** No**Status:** Inactive**Production notes:****Reserves:****Additional comments:****References:**

Churkin and others (1978); Cobb and others, 1981, OFR 81-767A

Primary reference: Churkin and others (1978)**Reporter:** M.T. Powers; D.F. Huber; J.M. Schmidt**Reporter affiliation:** USGS**Last report date:** 10/22/92

Site: Unnamed**Type:** Occurrence**ARDF no.** MU006**Latitude:** 68.08**Quadrangle:** MU A-1**Longitude:** 159.37**Location description and accuracy:**

Location plotted is from Cobb and others (1981, p. A18); occurrence is in low cutbank along south side of Noatak River, across from mouth of Itimtikrak Creek; located to within 2 mi (3.2 km).

Commodities:**Main:** Cu**Other:****Ore minerals:** Malachite**Gangue minerals:** Vein quartz**Geologic description:**

Malachite stains in two quartz veins about 2 ft. thick that cut Upper Devonian gray shale and sandstone.

Alteration:**Workings/Exploration:****Age:****Deposit model:**

Lode; veins

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**Production:** No**Status:** Inactive**Production notes:****Reserves:****Additional comments:****References:**

Cobb and others, 1981, OFR 81-767A

Primary reference: Cobb and others, 1981, OFR 81-767A**Reporter:** M.T. Powers; D.F. Huber; J.M. Schmidt**Reporter affiliation:** USGS**Last report date:** 10/22/92

Site: Ginny Creek**Type:** Prospect**ARDF no.** MU007**Latitude:** 68.29**Quadrangle:** MU B-4**Longitude:** 161.3**Location description and accuracy:**

Location plotted is prospect locality of Mayfield and others (1979, pl. 1); on ridge between Kugururok River and Trail Creek, about 7 mi (11.2 km) northwest of Misheguk Mountain; located to within 1 mi (1.6 km).

Commodities:**Main:** Pb, Zn**Other:** Ag?, Cu**Ore minerals:** Chalcopyrite, galena, sphalerite**Gangue minerals:** Pyrite, siderite**Geologic description:**

Sphalerite, galena, pyrite and rare chalcopyrite occur mainly as minute crystals scattered throughout mineralized sandstone, which also contains considerable siderite where mineralized and none elsewhere. Thin quartz veins cut the sedimentary beds; most are barren, but sulfides occur sparingly in some of them. rock and stream sediment samples indicate that the deposit may also contain silver, but the mineral(s) in which silver occurs has not been determined. Mineralized area is at least 1 mile long and up to 1/2 mile wide. Deposit apparently formed by hydrothermal open-space filling and replacement rather than by hot-spring deposition on sea floor, deposit is in lowest (Brooks Range) thrust sequence in area. Surface rubble is a discontinuous mixture of gossan and partly iron-stained sandstone. Sulfides are preserved only in the least weathered surface rocks. Surface leaching produces a pitted appearance on many of the limonite-rich rocks. Deposit is in region of extreme thrust faulting.

Alteration:

Iron-staining, leaching

Workings/Exploration:

Analyzed samples contain 0.3-1% Zn and variable Pb concentrations (Mayfield and others, 1979, p. 9-17).

Age:**Deposit model:**

Sediment-hosted Pb-Zn.

Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):**Production:** No**Status:** Inactive**Production notes:****Reserves:****Additional comments:**

See MAS/MILS Sequence # 0020190007 (U.S. Bureau of Mines, 1995)

References:

Mayfield and others, 1979, OFR 79-1092; Mayfield and others, 1979, C 804-B; Curtis and others, 1980; Cobb and others, 1981, OFR 81-767A; U.S. Bureau of Mines, 1995

Primary reference: Mayfield and others, 1979, OFR 79-1092

Reporter: M.T.Powers; D.F. Huber; J.M. Schmidt

Reporter affiliation: USGS

Last report date: 10/22/92

Site: Avan River**Type:** Occurrence**ARDF no.** MU008**Latitude:** 68.24**Quadrangle:** MU A-5**Longitude:** 161.93**Location description and accuracy:**

Location plotted is at center of area cited by Cobb and others (1981, p. A16), in headwaters area of Avan River about 1.5 mi (2.4 km) northeast of peak 3970; located to within 1 mi (1.6 km).

Commodities:**Main:** Cr**Other:** Ni**Ore minerals:** Chromite**Gangue minerals:****Geologic description:**

The geology at the Avan River occurrence is dominated by a Jurassic? ultramafic complex approximately 300 square miles in area, that structurally overlies a variety of Paleozoic and Mesozoic marine sedimentary rocks. The assemblages are characterized by extremely complex folding and faulting. The chromite occurs as small layers or bands and as disseminated grains in the north-central part of ultramafic complex. Pyrrhotite and pentlandite have been identified in polished sections of a few samples of chromite-bearing rocks.

Alteration:**Workings/Exploration:**

None

Age:

Jurassic?

Deposit model:

Lode; podiform chromite

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

8a

Production: No**Status:** Inactive**Production notes:****Reserves:****Additional comments:****References:**

Degenhart and others (1978); Cobb and others, 1981, OFR 81-767A; Grybeck (1977); Foley and others (1985)

Primary reference: Degenhart and others (1978)**Reporter:** M.T. Powers; D.F. Huber; J.M. Schmidt

Reporter affiliation: USGS

Last report date: 10/22/92

Site: Avan Hills**Type:** Occurrence**ARDF no.** MU009**Latitude:** 68.25**Quadrangle:** MU A-5**Longitude:** 161.9**Location description and accuracy:**

Location plotted is locality 1 of Foley and others (1989, p. 2); in headwaters area of Avan River about 2.3 mi (3.7 km) northeast of peak 3970; located to within 2 mi (3.2 km).

Commodities:**Main:** Cr, Platinum-group elements (PGE)**Other:****Ore minerals:****Gangue minerals:****Geologic description:**

Bedrock consists of variably serpentinized rocks of a Jurassic? mafic/ultramafic complex that includes dunite, wehrlite, peridotite, clinopyroxenite, and gabbro.

Alteration:**Workings/Exploration:**

Platinum and palladium were detected in chromite-bearing dunite (0.014 troy oz/st Pt) and in chromite concentrates (0.016 troy oz/st Pd). Iridium was detected in a pan concentrate sample (0.0036 troy oz/st).

Age:

Jurassic?

Deposit model:

Podiform chromite

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

8a

Production: No**Status:** Inactive**Production notes:****Reserves:**

Estimated Cr₂O₃ content measured in 26 deposits ranges from 465,000 to 1,734,000 short tons. The area contains at least 50 other minor or unmeasured chromite lode occurrences, and also has potential for large, low-grade chromite and PGE placer deposits.

Additional comments:**References:**

Foley and others (1989); Cobb and others, 1981, OFR 81-767A; Foley and others (1985)

Primary reference: Foley and others (1989)

Reporter: J.M. Schmidt

Reporter affiliation: USGS

Last report date: 10/22/92

Site: Kugururok River Chromite**Type:** Occurrence**ARDF no.** MU010**Latitude:** 68.12**Quadrangle:** MU A-5**Longitude:** 161.56**Location description and accuracy:**

Location plotted is locality listed for Sequence #0020190001 in U.S. Bureau of Mines (1995), about 3 mi (4.8 km) southwest of confluence of Trail Creek with Kugururok River and 1 mi. (1.6 km) southeast of VABN Rok; located to within 2 mi (3.2 km).

Commodities:**Main:** Cr**Other:****Ore minerals:** Chromite**Gangue minerals:****Geologic description:**

Type of occurrence and geologic setting unspecified, but other chromite occurrences in the region have a source in the Jurassic? Avan mafic/ultramafic complex.

Alteration:**Workings/Exploration:****Age:****Deposit model:****Deposit model number (After Cox and Singer, 1986 or Bliss, 1992):****Production:** No**Status:** Inactive**Production notes:****Reserves:****Additional comments:****References:**

U.S. Bureau of Mines, 1995

Primary reference: U.S. Bureau of Mines (1995)**Reporter:** J.H. Dover**Reporter affiliation:** USGS**Last report date:** 9/24/96

Site: Kugururok River**Type:** Occurrence**ARDF no.** MU011**Latitude:** 68.17**Quadrangle:** MU A-5**Longitude:** 161.43**Location description and accuracy:**

Location plotted is locality 2 of Grybeck (1977, p. 10), on Trail Creek about 2 mi (3.2 km) above confluence with Kugururok River; located to within 2 mi (3.2 km).

Commodities:**Main:** Cr**Other:****Ore minerals:** Chromite**Gangue minerals:****Geologic description:**

Specimen of chromite collected from a 'large amount of similar material said to occur in that area' (Grybeck, 1977, p. 10). Chromite probably derived from the gabbro-ultramafic complex at Misheguk Mountain.

Alteration:**Workings/Exploration:****Age:**

Jurassic?

Deposit model:

Lode; podiform chromite?

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

8a?

Production: No**Status:** Inactive**Production notes:****Reserves:****Additional comments:****References:**

Grybeck, 1977

Primary reference: Grybeck, 1977**Reporter:** J.H. Dover**Reporter affiliation:** USGS**Last report date:** 9/24/96

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