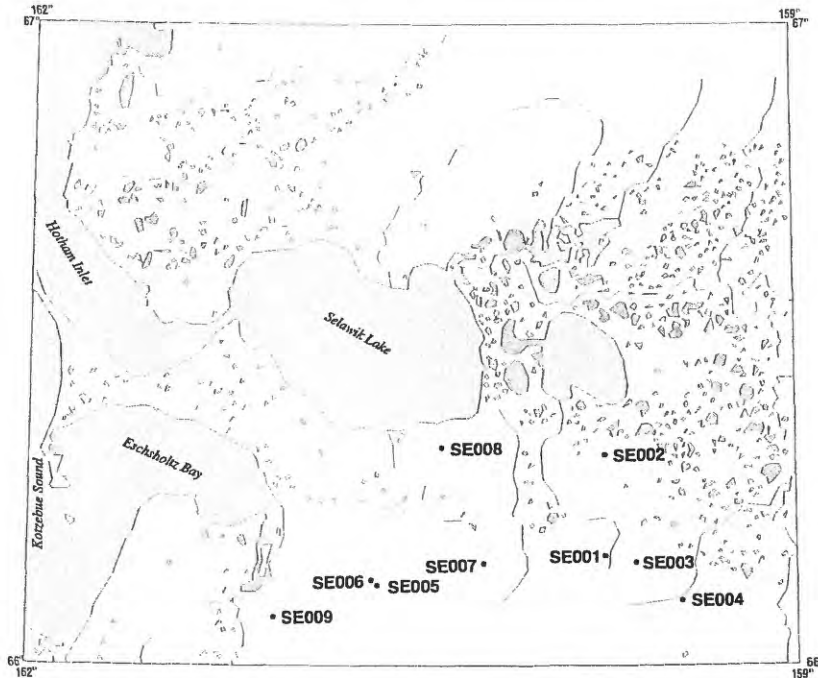


Selawik quadrangle

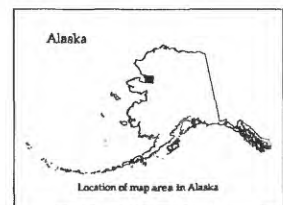
Descriptions of the mineral occurrences shown on the accompanying figure follow. See U.S. Geological Survey (1996) for a description of the information content of each field in the records. The data presented here are maintained as part of a statewide database on mines, prospects and mineral occurrences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



*Distribution of mineral occurrences in the Selawik
1:250,000-scale quadrangle, northwestern 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:

Anita Williams
Anchorage, AK



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.

OPEN-FILE REPORT 00-005

Site name(s): Unnamed (on tributary to Hunt Creek)

Site type: Occurrence

ARDF no.: SE001

Latitude: 66.17

Quadrangle: SE A-2

Longitude: 159.74

Location description and accuracy:

This occurrence is at an elevation of about 850 feet on an unnamed, north-flowing tributary to Hunt Creek. This site is in section 21, T. 9 N., R. 5 W., of the Kateel River Meridian. Cobb (1972, MF-406), unnumbered location; Grybeck (1977), location 10; and Barker (1985), fig. 7, location K.

Commodities:

Main: Pb, Zn

Other:

Ore minerals: Galena, pyrite, sphalerite

Gangue minerals: Calcite, quartz

Geologic description:

This occurrence consists of quartz-calcite veins in Cretaceous pink syenite that contain galena, sphalerite, and pyrite. A composite grab sample of sulfide-bearing rock contained up to 2% Pb and 1% Zn. A stream-sediment sample collected one mile downstream from the occurrence was anomalous in silver, copper, lead and zinc. The extent of the mineralized area could not be determined because of poor exposures (Elliott and Miller, 1969). Barker (1985) collected two stream-sediment samples from drainages north and west of the occurrence. Both samples contained 115 ppm Pb. He also noted quartz stockworks in granitic and volcanic rocks in the vicinity.

Alteration:

Age of mineralization:

Cretaceous or younger.

Deposit model:

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

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

22c

Production Status: None

Site Status: Inactive

Workings/exploration:

Occurrence sampled by U.S. Geological Survey (Elliott and Miller, 1969).

Production notes:

Reserves:

Additional comments:

References:

Elliott and Miller, 1969; Cobb, 1972 (MF-406); Cobb, 1975 (OFR 75-627); Eakins and others, 1977; Grybeck, 1977; Barker, 1985.

Primary reference: Elliott and Miller, 1969

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Unnamed (south of Inland Lake)

Site type: Occurrence

ARDF no.: SE002

Latitude: 66.328

Quadrangle: SE B-2

Longitude: 159.739

Location description and accuracy:

This occurrence is at an elevation of about 100 feet about 5 miles south of Inland Lake. This site is in the SW1/4 section 21, T. 11 N., R. 5 W., of the Kateel River Meridian. Barker (1985), figure 7, anomalous area 4.

Commodities:

Main: Th, U

Other:

Ore minerals: Radioactive minerals

Gangue minerals: Fluorite

Geologic description:

The country rocks in the area of this occurrence consist of the Cretaceous Inland Lake alkaline intrusive complex. The occurrence consists of locally abundant purple fluorite as matrix and breccia filling in syenite rubble. The fluorite is similar to that associated with the radioactive zones near VAMB Saturday at the Uranium 2 and 3 occurrences (ARDF number SE005 and SE006) (Barker, 1985). A sample of fluorite-bearing pulaskite, possibly a dike, from the Inland Lake alkaline complex contained 31 ppm U and 178 ppm Th, but no radioactive minerals or alteration zones were identified.

Alteration:

Age of mineralization:

Cretaceous.

Deposit model:

Radioactive minerals in fluorite-bearing pulaskite.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

The site was visited briefly and sampled by U.S. Bureau of Mines in 1984.

Production notes:

Reserves:

Additional comments:

The occurrence is located within the Selawik National Wildlife Refuge.

References:

Miller and Bunker, 1975; Cobb and Miller, 1981 (OFR 81-847A); Barker, 1985.

Primary reference: Miller and Bunker, 1975

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Unnamed (in Selawik Hills)**Site type:** Occurrence**ARDF no.:** SE003**Latitude:** 66.16**Quadrangle:** SE A-2**Longitude:** 159.62**Location description and accuracy:**

This occurrence is at an elevation of about 550 feet at the east edge of section 24, T. 9 N., R. 5 W., of the Kateel River Meridian. Barker (1985), fig. 7, location L.

Commodities:**Main:** Cu**Other:****Ore minerals:** Chalcopyrite, malachite, pyrite**Gangue minerals:** Calcite, chlorite, epidote**Geologic description:**

The country rocks at this occurrence consist of Jurassic metabasalt and metasedimentary rocks. The occurrence consists of pyrite, malachite, and minor chalcopyrite in calcite, chlorite and epidote veins in chlorite-altered basalt (greenstone) and in fine-grained banded metasedimentary rocks. Metallic minerals in the veins occur as veinlets and pods. Sulfide banding in the greenstone consists predominately of pyrite. Copper values in high-grade grab samples did not exceed 1,000 ppm. Copper values greater than 100 ppm were noted in a stream-sediment sample taken from a stream which drains the site (Barker, 1985).

Alteration:

Chlorite and epidote.

Age of mineralization:

Jurassic?

Deposit model:

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

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

23?

Production Status: None

Site Status: Inactive

Workings/exploration:

Site was sampled by the U.S. Bureau of Mines (Barker, 1985).

Production notes:

Reserves:

Additional comments:

This occurrence is on the boundary of the Selawik National Wildlife Refuge.

References:

Barker, 1985.

Primary reference: Barker, 1985

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Uranium 1 (in Selawik Hills)**Site type:** Occurrence**ARDF no.:** SE004**Latitude:** 66.100**Quadrangle:** SE A-1**Longitude:** 159.445**Location description and accuracy:**

This occurrence is at an elevation of about 700 feet along an unnamed creek in the NW1/4 section 14, T. 8 N., R. 4 W., of the Kateel River Meridian. Barker (1985), fig. 7, location M.

Commodities:**Main:** Th, U**Other:****Ore minerals:** Radioactive minerals**Gangue minerals:****Geologic description:**

A poorly exposed outcrop of Tertiary sedimentary rocks occurs at this locality. The outcrop consists of alternating 4-inch-thick beds of lignitic coal and black mudstone. The bedding strikes N. 50 E. and dips 40 SE. A sample of carbonaceous sandstone contained 213 ppm U₃O₈ and 26 ppm Th (Barker, 1985).

Alteration:**Age of mineralization:**

Tertiary.

Deposit model:

Sandstone U (Cox and Singer, 1986; model 30c)

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

30c

Production Status: None**Site Status:** Inactive

Workings/exploration:

One sample was collected and analyzed by U.S. Bureau of Mines (Barker, 1985).

Production notes:**Reserves:****Additional comments:****References:**

Barker, 1985.

Primary reference: Barker, 1985

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Uranium 2 (in Selawik Hills)**Site type:** Prospect**ARDF no.:** SE005**Latitude:** 66.124**Quadrangle:** SE A-4**Longitude:** 160.633**Location description and accuracy:**

This prospect is at an elevation of about 950 feet in the NE1/4 section 6, T. 8 N., R. 9 W., of the Kateel River Meridian. Barker (1985), figs. 7, 8, location D.

Commodities:**Main:** Th, U**Other:****Ore minerals:** Radioactive minerals**Gangue minerals:** Fluorite**Geologic description:**

The country rock in the area of this prospect is the mid-Cretaceous Selawik Hills alkali intrusive complex. The prospect is one of several areas of anomalous radioactivity within the complex. Barker (1985) describes the following features at this site. In anomalous area 1, radioactive altered zones occur in medium-grained biotite-hornblende syenite. At location D, a north-trending ridge of hornblende syenite hosts zones of clay, chlorite, epidote and carbonate alteration. Fluorite is common as discrete grains and as fracture fillings. At sample site 25R, a rubble zone yielded radiometric levels of about 3 times background and contained 770 ppm U₃O₈ and 4,957 ppm Th. An unidentified red, waxy mineral accounted for 5% to 10% of the rock.

Alteration:

Clay, chlorite, epidote, and carbonate alteration.

Age of mineralization:

Cretaceous.

Deposit model:

Disseminated radioactive minerals in syenite.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Shallow prospect pits and a core drill hole, probably dating from the 1950's, were found in the vicinity of the prospect (Barker, 1985). Samples and preliminary mapping was done by U.S. Bureau of Mines in early 1980's.

Production notes:

Reserves:

Additional comments:

References:

Grybeck, 1977; Barker, 1985.

Primary reference: Barker, 1985

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Uranium 3 (in Selawik Hills)**Site type:** Prospect**ARDF no.:** SE006**Latitude:** 66.132**Quadrangle:** SE A-4**Longitude:** 160.657**Location description and accuracy:**

This prospect is at an elevation of about 950 feet in the SE1/4 section 31, T. 9 N., R. 9 W., of the Kateel River Meridian. Barker (1985), figures 7, 8, location C, sample 23-R

Commodities:**Main:** Th, U**Other:** Nb, Y**Ore minerals:** Unidentified Nb-U-Ti mineral, xenotime, zircon**Gangue minerals:** Epidote, fluorite, goethite, limonite**Geologic description:**

The country rock in the area of this prospect is the mid-Cretaceous Selawik Hills alkaline intrusive complex. The prospect is one of several areas of anomalous radioactivity within the complex. At this location, a zone of altered porphyritic hornblende syenite contains accessory to minor amounts of zircon, xenotime, sphene, epidote, fluorite, goethite and an unidentified red, waxy mineral. The zone is over 10 feet wide and 100 to 250 feet long. Rock sample 23R contained 734 ppm U₃O₈, 875 ppm Th, and 535 ppm Nb. Emission spectrographic analysis of a split of this sample indicates 0.01% La, 0.1% Nb, 0.005% Y, and 1.0% Zr. A diamond drill hole is located to the southwest of the sample site (Barker, 1985).

Alteration:

An unidentified red, waxy mineral is altered to goethe and limonite.

Age of mineralization:

Cretaceous.

Deposit model:

Disseminated radioactive minerals in syenite.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Shallow prospect pits and at least 2 drill holes are evidence of earlier exploration. The exploration apparently took place in the mid-1970's and may have been more extensive than is evident. No information is available on that exploration (Barker, 1985).

Production notes:

Reserves:

Additional comments:

References:

Grybeck, 1977; Barker, 1985.

Primary reference: Barker, 1985

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Uranium 4 (in Selawik Hills)**Site type:** Occurrence**ARDF no.:** SE007**Latitude:** 66.158**Quadrangle:** SE A-3**Longitude:** 160.214**Location description and accuracy:**

This occurrence is at an elevation of about 1,900 feet in the NW1/4 section 29, T. 9 N., R. 7 W., of the Kateel River Meridian. Barker (1985), location I, sample 59R.

Commodities:**Main:** Th, U**Other:****Ore minerals:** Xenotime**Gangue minerals:****Geologic description:**

The country rock in the area of this occurrence is the mid-Cretaceous Selawik Hills alkaline intrusive complex. The occurrence is one of several areas of anomalous radioactivity within the complex. According to Barker (1985), at location I, quartz veinlets associated with lineaments tentatively identified as shear zones cut foliated syenite and monzonite. The syenite and monzonite have been partially replaced by silica and chlorite. The margins of the presumed shear zones are more intensely altered and are host to quartz veinlets up to 0.5 inch thick. Accessory xenotime was observed in a thin section of this rock. Secondary biotite is locally present. Grab sample 59R, from the biotite alteration, contained 220 ppm U₃O₈ and 36 ppm Th. Radiometric readings over the presumed shear zones were 1.5 to 2 times background.

Alteration:

Biotization.

Age of mineralization:

Cretaceous.

Deposit model:

Radioactive shear zone in alkaline igneous complex.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

A grab sample from this site was analyzed by the U.S. Bureau of Mines (Barker, 1985).

Production notes:

Reserves:

Additional comments:

References:

Barker, 1985.

Primary reference: Barker, 1985

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Unnamed (south of Selawik Lake)

Site type: Occurrence

ARDF no.: SE008

Latitude: 66.34

Quadrangle: SE B-3

Longitude: 160.38

Location description and accuracy:

The occurrence is at an elevation of about 1,300 feet on hill 1378, about 3 miles south of the southeast end of Selawik Lake. The site is in section 21, T. 11 N., R. 8 W., of the Kanteel River Meridian. Barker (1985), anomalous area 2, location O.

Commodities:

Main: Th, U

Other:

Ore minerals: Zircon

Gangue minerals:

Geologic description:

The country rocks in the area of this occurrence consist of the mid-Cretaceous Selawik lake and Inland Lake alkaline intrusive complexes. There are three types of radioactive occurrences in the Selawik Lake complex: quartz veins associated with a fault zone; lamprophyre dikes; and radioactive zones in nepheline syenite. According to Barker (1985), at location O, boulders of medium-grained syenite displayed up to 4 times the background radioactivity. Chip sample 4R contained 123 ppm U₃O₈ and 380 ppm Th. Pronounced metamict halos surrounding zircon grains in biotite suggest that at least some of the radioactive material is in the zircon. A fine-grained syenite intermixed with rubble at this location contained 36 ppm U₃O₈ and 91 ppm Th.

Alteration:

Age of mineralization:

Cretaceous.

Deposit model:

Radioactive occurrences in syenite and nepheline syenite.

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

Production Status: None

Site Status: Inactive

Workings/exploration:

The area was visited by U.S. Geological Survey geologists and the U.S. Bureau of Mines. Several rock and stream sediment samples were collected from the area.

Production notes:

Reserves:

Additional comments:

References:

Miller and Bunker, 1975; Cobb and Miller, 1981 (OFR 81-847 A and B); Barker, 1985.

Primary reference: Barker, 1985

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

Site name(s): Boulder Creek

Site type: Mine

ARDF no.: SE009

Latitude: 66.075

Quadrangle: SE A-5

Longitude: 161.036

Location description and accuracy:

This placer mine is located at an elevation of about 500 feet, in the headwaters of (informally named) Boulder Creek, a west-flowing tributary to Buckland River. The old workings are at the fork in the stream. The site is in the SW1/4 section 20, T. 8 N., R. 11 E., of the Kateel River Meridian.

Commodities:

Main: Au

Other:

Ore minerals: Gold

Gangue minerals:

Geologic description:

A small placer gold deposit is located in the upper portion of (informally named) Boulder Creek. Old tailings are visible on the southern tributary stream bank. The deposit was worked by hand in the 1950's (Paul Savok, oral communication, 1995).

Alteration:

Age of mineralization:

Quaternary.

Deposit model:

Placer Au-PGE (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:

This placer deposit was worked by hand methods in the 1950's. Prospecting and staking were done in the mid-1990's. Regional stream silt and pan concentrate samples were collected in the Boulder Creek area by WGM in 1974 (NANA Regional Corp. data files).

Production notes:**Reserves:****Additional comments:****References:**

Degenhart and Bigelow, 1974.

Primary reference: This description.

Reporter(s): Anita Williams (Anchorage, AK)

Last report date: 12/02/99

References

- Alaska Division of Geological and Geophysical Surveys, 1973, Aeromagnetic map, southwest Selawik quadrangle: Alaska Division of Geological and Geophysical Surveys Open-File Report 1, 5 p., 1 sheet scale 1:250,000.
- Alaska Division of Geological and Geophysical Surveys, 1975, Aeromagnetic map, northeast Selawik quadrangle: Alaska Division of Geological and Geophysical Surveys Open-File Report 78, 4 p., 1 sheet scale 1:250,000.
- Barker, J.C., 1985, Sampling and analytical results of a reconnaissance in the Selawik Hills area, northwest Alaska: U.S. Bureau of Mines Open-File Report 43-85, 67 p.
- Cobb, E.H., 1972, Metallic Resources of the Selawik quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-406, 1 sheet, scale 1:250,000.
- Cobb, E.H., 1975, Summary of references to mineral occurrences (other than mineral fuels and construction materials) in five quadrangles in west central Alaska (Hughes, Kotzebue, Melozitna, Selawik, Shungnak): U. S. Geological Survey Open-File Report 75-627, 58 p.
- Cobb, E.H., and Miller, T.P., 1981, Summaries of data on and lists of references to metallic and selected nonmetallic mineral occurrences in the Hughes, Kotzebue, Melozitna, Selawik and Shungnak quadrangles, west-central Alaska: U.S. Geological Survey Open-File Report 81-847A, 14 p.
- Cobb, E.H., and Miller, T.P., 1981, Summaries of data on and lists of references to metallic and selected nonmetallic mineral occurrences in the Hughes, Kotzebue, Melozitna, Selawik and Shungnak quadrangles, west-central Alaska: U.S. Geological Survey Open-File Report 81-847B, 14 p.
- Degenhart, C.E. and Bigelow, C.G., 1974, Preliminary minerals evaluation NANA Regional corporation selection lands: unpublished industry report, WGM, Anchorage, Alaska, 62 p. (held by NANA Regional Corporation, Anchorage, Alaska).
- Eakins, G. R., Jones, B. K. and Forbes, R. B., 1977, Investigation of Alaska's uranium potential: Alaska Division of Geological and Geophysical Surveys Open-File Report 109, 213 p., 10 sheets scale 1:40,000.
- Elliott, R.L. and Miller, T.P., 1969, Results of stream-sediment sampling in western Candle and southern Selawik quadrangles, Alaska: U.S. Geological Survey Open File Report 353, 61 p., 1 sheet, scale 1:250,000.
- Grybeck, D., 1977, Map showing known mineral deposits of the Brooks Range, Alaska: U.S. Geological Survey Open-File Report 77-166C, 45 p., 1 sheet, scale 1:1,000,000.
- Hawley, C.C. and Associates, 1978, Uranium evaluation of the Seward-Selawik area, Alaska: NURE report prepared for Department of Energy, contract GJBX-105(78), 155 p.
- Karl, S.M., Dumoulin, J.A., Ellersieck, I., Harris, A.G. and Schmidt, J.M., 1989, Preliminary geologic map of the Baird Mountains and part of the Selawik quadrangles, Alaska: U.S. Geological Survey Open-File Report 81-551, 65 p., 1 sheet, scale 1:250,000.
- Miller, T.P., 1976, Hardrock uranium potential of Alaska; U.S. Geological Survey Open-File Report 76-246, 7 p.
- Miller, T.P. and Anderson, L.A., 1969, Airborne radioactivity and total intensity magnetic survey of the southern Kobuk-Selawik lowland, western Alaska: U.S. Geological Survey Open-File Report 69-170, 6 p.
- Miller, T.P. and Bunker, C.M., 1975, Uranium, thorium and potassium analyses of selected plutonic rocks from west central Alaska: U.S. Geological Survey Open-File Report 75-216, 5p.

- Patton, W.W. and Miller, T.P., 1968, Regional geologic map of the Selawik and southeastern Baird Mountains quadrangles, Alaska: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-530, scale 1:250,000.
- U.S. Bureau of Mines, 1978, Mineral appraisal of the proposed Kobuk Valley National Park, Alaska: U.S. Bureau of Mines Open-File Report 110-78, 31 p.
- U.S. Bureau of Mines, 1979, Mineral appraisal of the proposed Selawik National Wildlife Refuge, Alaska, a preliminary comment: U.S. Bureau of Mines Open-File Report 22-79, 7 p.
- Wiltse, M.A., 1991, National uranium resource evaluation (NURE) geochemical data for stream- and lake-sediment samples, Alaska, Selawik quadrangle: Alaska Division of Geological and Geophysical Surveys Public Data File 91-22, 33 p., 1 diskette.