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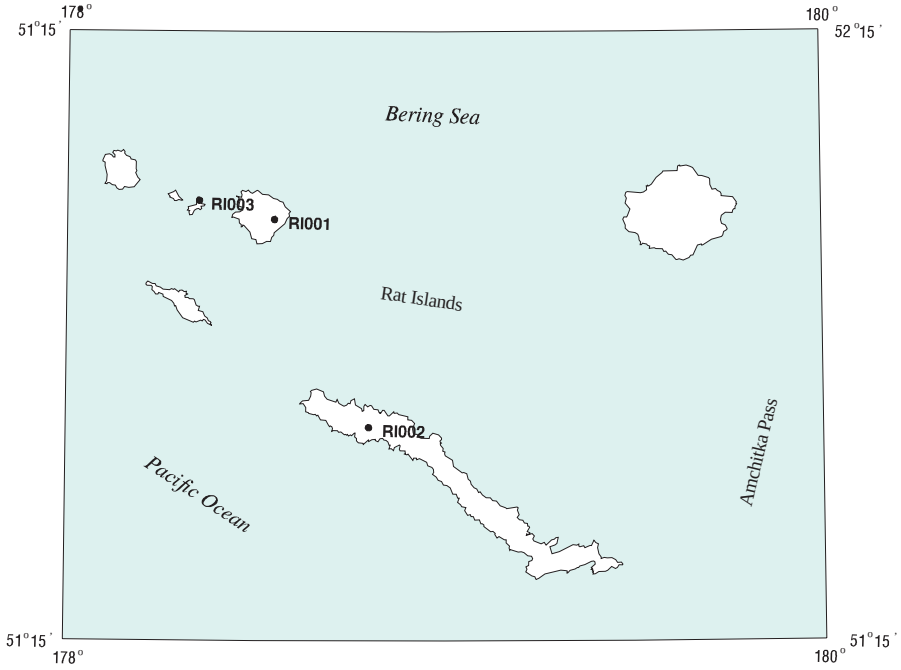
Alaska Resource Data File

Rat Islands 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 Rat Islands 1:250,000-scale quadrangle, Aleutian Islands, Alaska

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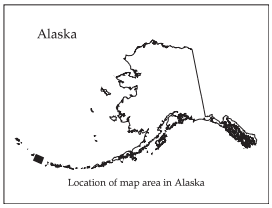

OPEN-FILE REPORT 00-029

Site name(s): Unnamed (on Little Sitkin Island)

Site type: Occurrence

ARDF no.: RI001

Latitude: 51.937 **Quadrangle:** RI C-5

Longitude: 178.562

Location description and accuracy:

This site is located on the northeast part of Little Sitkin Island, at an elevation of about 2500 feet on the south side of a breached crater. It is approximately 2.2 miles west of Pratt Point. Location is accurate to within 1000 feet.

Commodities:

Main: S

Other:

Ore minerals: Native sulfur

Gangue minerals:

Geologic description:

Native sulfur occurs in a fumarolic area covering approximately 10 acres on the south side of a breached crater. It replaces several low-silica flow members of the Little Sitkin Dacite of Quaternary age (Snyder, 1959, p. 206-206).

Rocks in the central part of the crater have been intensely altered to white clay. Sulfur occurs as veins and vug linings in the clay. Sulfur also occurs as surface deposits composed of massive, mammillary aggregates of sulfur crystals without much rock clay.

One sample of the surface deposit collected by Snyder assayed 95.8 percent sulfur. Assuming a 3-meter thick surface deposit extending over 10 acres he estimated a maximum possible potential of 200,000 tons. He considered, however, that the actual tonnage is probably much smaller.

Alteration:

All volcanic rocks in the center of the crater exhibit intense argillic alteration and have been totally replaced by white clay (kaolinite?).

Age of mineralization:

Quaternary.

Deposit model:

Fumarolic sulfur

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Snyder (1959) collected several samples for analyses. One sample of the surface deposit assayed 95.8 percent sulfur.

Production notes:

Reserves:

Snyder (1959) estimated 200,000 tons as a maximum possible resource. Actual tonnage is probably much smaller.

Additional comments:

Site is located within Alaska Maritime Natural Wildlife Refuge.

References:

Snyder, 1959; Cobb, 1980 (OFR 80-909).

Primary reference: Snyder, 1959

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 1/24/00

Site name(s): Unnamed (on the western part of Amchitka Island)

Site type: Occurrence

ARDF no.: RI002

Latitude: 51.6 **Quadrangle:** RI B-4

Longitude: 178.8

Location description and accuracy:
This site represents various locations on the western one-third of Amchitka Island. Specific locations are not available.

Commodities:

Main: Fe

Other: Cu, Pb, Zn

Ore minerals: Pyrite

Gangue minerals:

Geologic description:
Pyritic zones are abundant on the western one-third of Amchitka Island. Pyrite in quantities up to one-third of the volume of the rock occurs in volcanic rock of the Amchitka Formation and in sedimentary rocks of the Banjo Point Formation (Powers, 1960, p. 541). The pyrite mineralization tends to follow zones of fractures of diverse strike. One sample assayed trace copper, lead, and zinc.

Alteration:

Age of mineralization:
Tertiary.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located in Alaska Maritime Natural Wildlife Refuge.

References:
Powers and others, 1960.

Primary reference: Powers and others, 1960

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 1/24/00

Site name(s): Unnamed (on Davidof and Lopy Islands)

Site type: Occurrence

ARDF no.: RI003

Latitude: 51.968 **Quadrangle:** RI C-5

Longitude: 178.368

Location description and accuracy:
This site represents northern tip of Davidof Island and the southern 1/2 of Lopy Island (located about 1000 feet north of Davidson Island). Site location is accurate to within 1000 feet.

Commodities:

Main: Fe

Other: Cu?, Pb?, Zn?

Ore minerals: Iron-oxides

Gangue minerals:

Geologic description:
Davidof and Lopy Island consist entirely of Late Tertiary to Quaternary andesitic lava flows and pyroclastic rocks (Nelson, 1959). A large percentage of the rocks on the northern tip of Davidof Island and on the southern 1/2 of Lopy Island have been intensely altered to various shades of yellow, orange, and brown. Some of these altered zones may contain traces of copper, lead, and zinc. The most intensely altered rock consists entirely of iron oxide, chlorite, magnetite, and quartz.

Alteration:
The original flow rocks have been intensely altered to iron oxides, chlorite, magnetite, and quartz. The iron oxides may have resulted from the weathering of pyrite.

Age of mineralization:
Late Tertiary or Quaternary.

Deposit model:

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

Production Status: None

Site Status: Inactive

Workings/exploration:

Production notes:

Reserves:

Additional comments:
Site is located within the Alaska Maritime Natural Wildlife Refuge.

References:
Nelson, 1959.

Primary reference: Nelson, 1959

Reporter(s): S.H. Pilcher (Anchorage)

Last report date: 1/24/00

References

Coats, R.R., 1959, Geologic reconnaissance of Semisopochnoi Island, Alaska: U.S. Geological Survey Bulletin 1028-O, p. 257-299, 1 map sheet, scale 1:63,360.

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Lewis, R.Q., Nelson, W.H., and Powers, H.A., 1960, Geology of Rat Island, Aleutian Islands, Alaska: U.S. Geological Survey Bulletin 1028-Q, p. 555-562, 1 map sheet, scale 1:63,360

Nelson, W.H., 1959, Geology of Segula, Davidof, and Khvostof Islands, Alaska: U.S. Geological Survey Bulletin 1028-K, p. 257-266, 2 map sheets, scale 1:25,000.

Powers, H.A., Coats, R.R., and Nelson, W.H., 1960, Geology and submarine physiography of Amchitka Island, Alaska: U.S. Geological Survey Bulletin 1028-P, p. 521-554, 1 map sheet, scale 1 inch = 1.5 miles.

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Snyder, G.L., 1959, Geology of Little Sitkin Island, Alaska: U.S. Geological Survey Bulletin 1028-H, p. 169-210, 1 map sheet, scale 1:20,000.