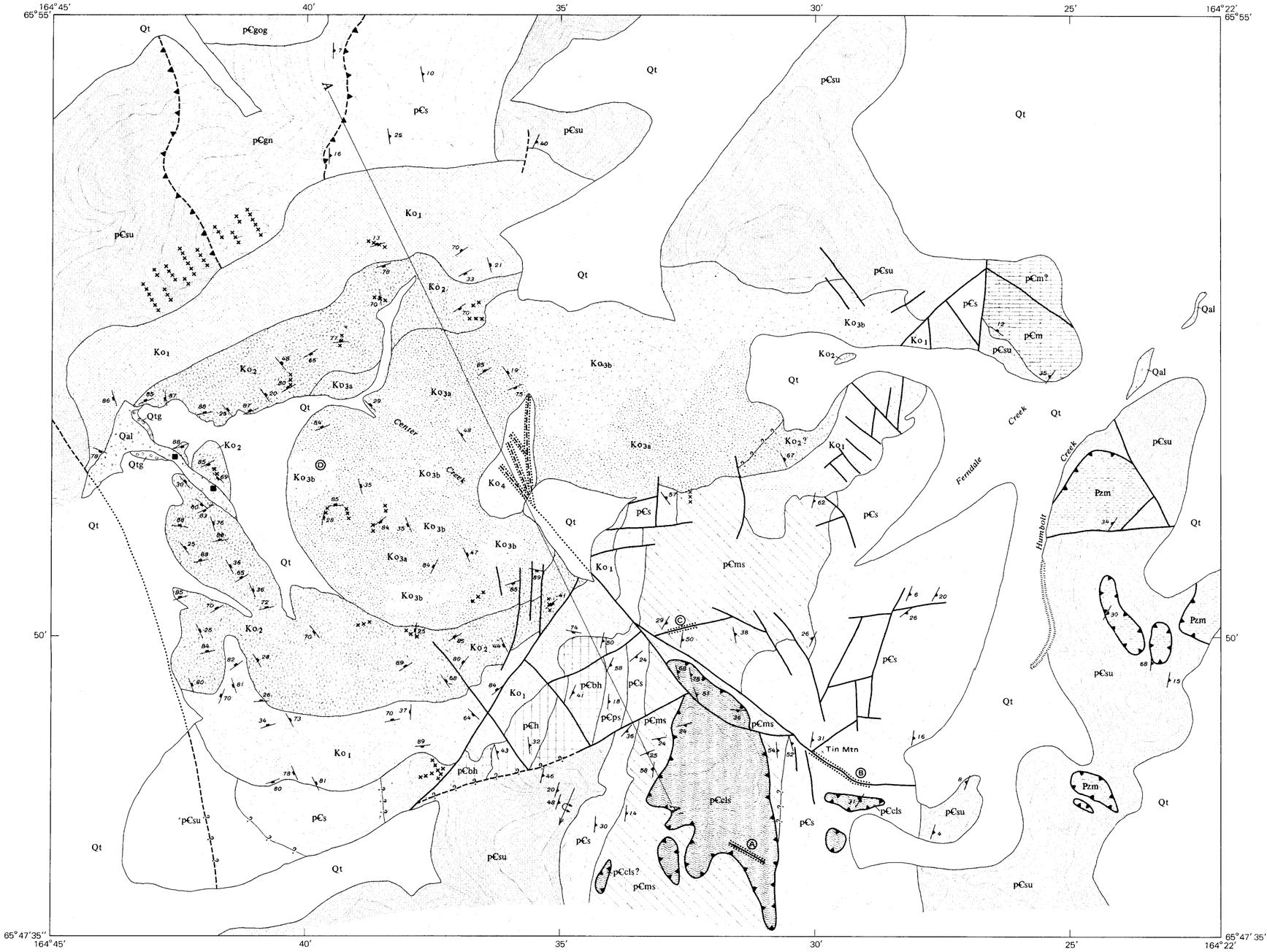
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PROFESSIONAL PAPER 1079
PLATE 1



Base from U.S. Geological Survey, 1:63,360
Bendeleben D-5 and Bendeleben D-6, 1950

SCALE 1:48 000

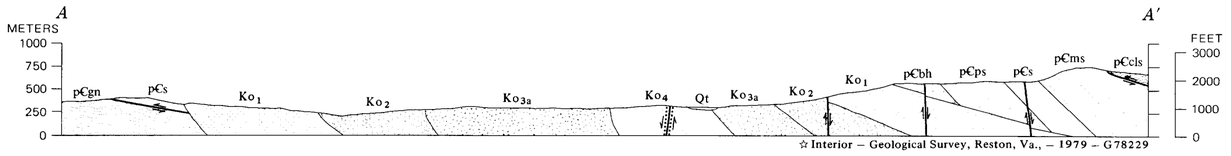
1 ½ 0 1 2 3 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 50 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

APPROXIMATE MEAN DECLINATION, 1979
TRUE NORTH
MAGNETIC NORTH

Geology by Travis Hudson, 1968-70;
C. L. Sainsbury, R. Kachadoorian, and
T. Richards, 1968



CORRELATION OF MAP UNITS

Qt, Qal, Qtg	Holocene	QUATERNARY
Oonatut Granite Complex: Ko_4, Ko_{3b}, Ko_{3a}, Ko_2, Ko_1	Upper Cretaceous	CRETACEOUS
Pzm		PALEOZOIC
p€bh, p€h, p€ps, p€s, p€ms, p€cls, p€m, p€su; p€gog, p€gn		PRECAMBRIAN(?)

DESCRIPTION OF MAP UNITS

Qt TUNDRA – Dense vegetation mat consisting of herbaceous and shrubby plants

Qal ALLUVIUM – Unconsolidated sand and gravel of present drainages

Qtg TERRACE GRAVELS – Unconsolidated stream gravel on raised surfaces adjacent to lower Hot Springs Creek

OONATUT GRANITE COMPLEX – Includes:

Ko_4 Zone 4. Includes facies 4A and 4B, undivided – Fine- to medium-grained hypidiomorphic equigranular biotite granite and leucogranite. Commonly contains miarolitic cavities

Zone 3. Divided into:

Ko_{3b} Facies 3B. Porphyritic biotite granite with fine-grained to aplitic groundmass interstitial to plagioclase, quartz, potassium feldspar, and biotite phenocrysts. Distribution within zone 3 probably greater than shown on map

Ko_{3a} Facies 3A. Fine- to coarse-grained seriate biotite granite

Ko_2 Zone 2. Includes facies 2 – Porphyritic biotite granite. Contains large pinkish-gray potassium feldspar phenocrysts in a coarse groundmass

Ko_1 Zone 1. Includes facies 1A, 1B, and 1C, undivided – Chiefly fine- to medium-grained hypidiomorphic equigranular biotite granite. Varies systematically from fine-grained at contact to coarse-grained and semi-porphyritic adjacent to Ko_2

Pzm MARBLE – Medium-gray weathering massive to thinly banded crystalline marble. Fine- to medium-grained

p€bh BANDED HORNFELS – Medium-light-gray, thinly banded. Contains biotite- and amphibole-bearing bands interlayered with calc-silicate and quartz-rich bands. Fine-grained

p€h DARK-GRAY HORNFELS – Medium-dark-gray schistose biotite-cordierite-quartz hornfels. Fine-grained

p€ps PHYLLITIC SCHIST – Medium-gray to medium-dark-gray crenulated calcite-albite-quartz-muscovite schist. Carbonaceous and fine-grained

p€s METASILTITE – Dark-gray and very quartzose (80–95 percent quartz). Carbonaceous and very fine grained

p€ms MICA-QUARTZ SCHIST – Brownish-gray micaceous and calcareous schist. Lineated and fine-grained

p€cls CHLORITE-MUSCOVITE-QUARTZ SCHIST – Greenish-gray complexly deformed schist characterized by white quartz segregations. Locally with intercalated schistose marble. Carbonaceous and fine- to medium-grained

p€m SCHISTOSE MARBLE – Buff-orange weathering calcareous schist and medium-gray platy marble. Fine-grained

p€su CARBONACEOUS METASEDIMENTARY ROCKS, UNDIVIDED – Medium-gray carbonaceous, micaceous, and locally calcareous schistose metasiltstone. Dominantly fine-grained

p€gog GRANITE ORTHOGNEISS – Light-orange to gray muscovite-plagioclase-quartz-microcline gneiss. Fine- to medium-grained

p€gn GNEISS – Light-brownish-gray biotite-plagioclase-quartz gneiss. Fine- to medium-grained

Contact – Queried where inferred

Thrust fault – Dashed where approximately located. Sawteeth on upper plate

High-angle fault – Dashed where approximately located; dotted where concealed; queried where inferred; stippled where altered and (or) mineralized

Overturned anticline – Showing direction of plunge and dip of limbs

67 Strike and dip of joint

15 Strike and dip of foliation

××××× Dike

■ Thermal spring

Placer mine workings

Ⓐ Locality referred to in text

☆ Interior – Geological Survey, Reston, Va., – 1979 – G78229

GEOLOGIC MAP AND GENERALIZED CROSS SECTION OF THE SERPENTINE HOT SPRINGS AREA, SEWARD PENINSULA, ALASKA