

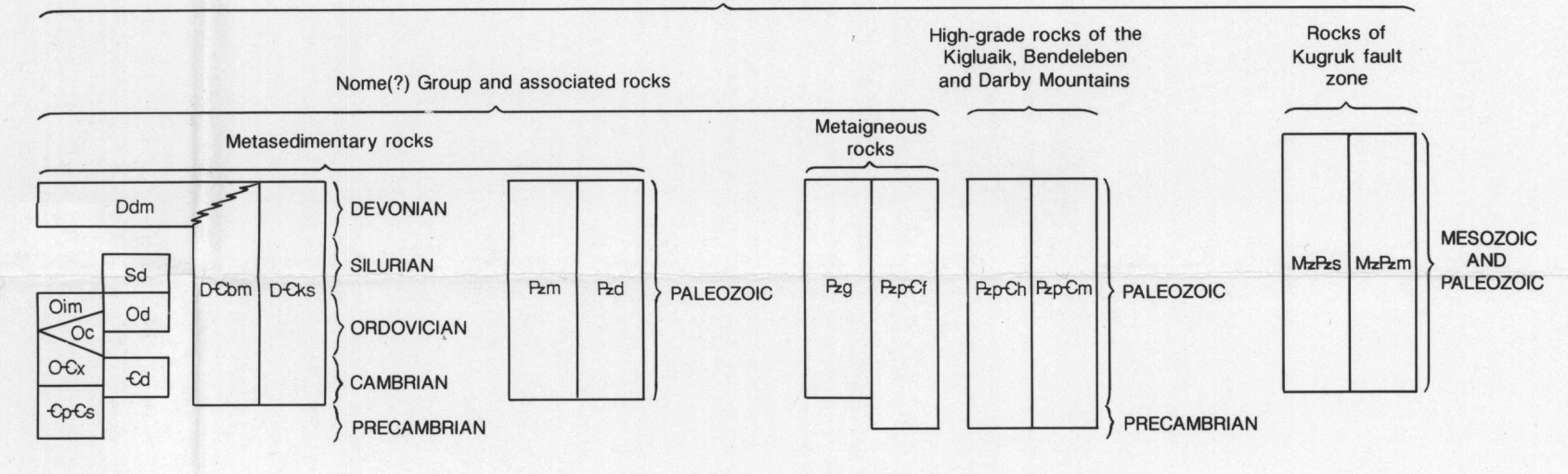
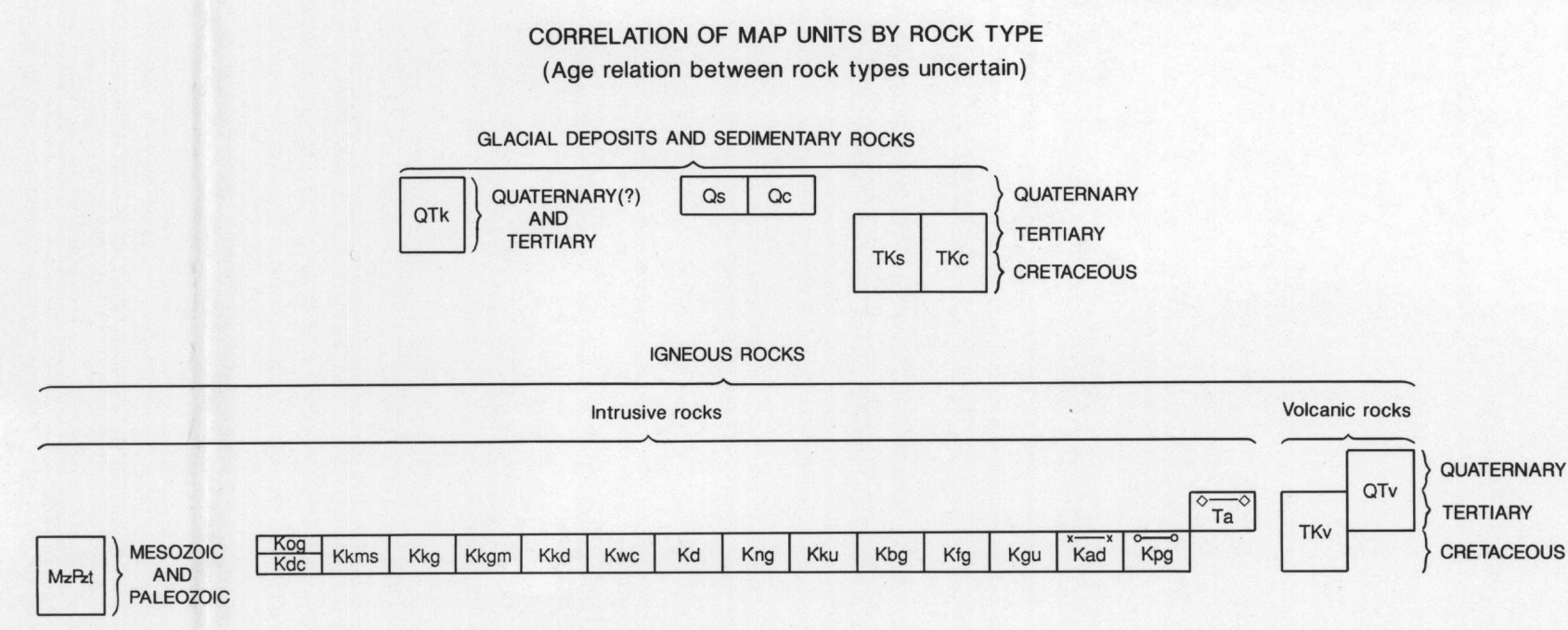
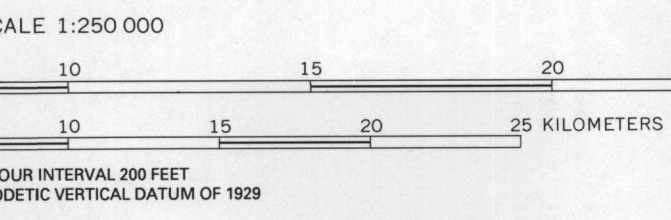


EXPLANATION

Tract favorable for low-sulfide gold-quartz veins

Tract	Level of Favorability
1	High
2a	High
2b	Moderate
3a	High
3b	Moderate
4	Moderate
5	Low
6	Low
7a	Moderate
7b	Moderate
7c	High
7d	Moderate
7e	High
7f	High

● Low-sulfide gold-quartz veins
○ Possible low-sulfide gold-quartz veins



IGNEOUS ROCKS

Intrusive Rocks

Ta Altered quartz latite (Tertiary)—Light-tan to orange-weathering, altered porphyritic dikes, sills, and plugs of quartz latite, rhyolite, and possibly andesite; hypabyssal textures.

Kog Onastut Granite Complex (Cretaceous)—Predominantly monzogranite with lesser syenogranite; easternmost of the granites on Seward Peninsula; placer deposits of gold and cassiterite occur on streams draining the granite; K-Ar age is 69 to 71 Ma.

Kachauk pluton (Cretaceous)—Consists of:

- Monzite to syenite—Monzite and syenite phase of the Kachauk pluton; cut by apfite, quartz latite porphyry, leucophyse, and alkaline dikes; K-Ar age is 100 Ma.
- Kkg Grandiorite—Grandiorite to quartz monzite phase of the Kachauk pluton; cut by apfite, quartz latite porphyry, leucophyse, and alkaline dikes.
- Kkgm Gneissic monzite—Gneissic monzite of the Kachauk pluton; may be border phase to the monzite to syenite phase (Kkm).
- Kkd Diorite—Hybrid diorite of the Kachauk pluton; may be border phase of the monzite to syenite phase (Kkm).
- Kwc Windy Creek pluton (Cretaceous)—Quartz monzite, locally cut by biotite granodiorite dikes; nepheline syenite boulders reported from streams on east side; pluton locally altered and contains veins with fluorite, molybdenite, galena, sphalerite, and scheelite.
- Kd Darby pluton (Cretaceous)—Monzogranite and local granodiorite characterized by alkali feldspars as much as 5 cm long; K-Ar ages range from 90 to 96 Ma.
- Kng Granitic rocks of Nimrod Hill area (Cretaceous)—Monzogranite, quartz monzite, syenogranite, and syenite of Asses Ears, Crossfox Butte, and Nimrod Hill stocks; K-Ar ages range from 91 to 96 Ma.
- Kku Kagra pluton (Cretaceous)—Quartz monzite to quartz monzodiorite; local dioritic border phase; K-Ar age is 94 Ma.
- Kbg Granitic rock of Bendeleben Mountains (Cretaceous)—Quartz monzite, monzogranite, quartz monzodiorite, and granodiorite of the Pargon, Bendeleben, and Kuzitrin plutons; K-Ar ages range from 81 to 83 Ma.
- Kfg Foliated granitic rocks (Cretaceous)—Foliated, lens- to sill-shaped bodies mostly of leucocratic syenogranite; contacts are conformable to surrounding metamorphic rocks.
- Kgu Granitic rocks, undivided (Cretaceous)—Dikes, sills, and small plugs; variable accessory mineralogy.
- Kad Alkalic dikes (Cretaceous)—Nepheline syenite and pseudoleucite porphyry dikes as much as 10 m wide and 900 m long; the monzite to syenite unit (Kkm) of the Kachauk pluton is highly radioactive adjacent to dikes; K-Ar age is 96 Ma.
- Kpg Pegmatite (Cretaceous)—Alkali-feldspar granite to quartz monzodiorite containing large variety of accessory minerals; one dike in the Kiguk Mountains yielded a K-Ar age of 81 Ma.
- Kdc Dry Canyon stock (Cretaceous)—Nepheline syenite; K-Ar age is 108 Ma. Tonallite of Spruce Creek (Mesozoic and Paleozoic)—Light-tan to white-weathering tonalite; poorly exposed and locally altered.

Volcanic Rocks

QTV Volcanic rocks, undivided (Quaternary and Tertiary)—Basalt lava flows and associated vent deposits; mostly alkali-olivine basalt; lesser olivine tholeiite; ages range from 29 Ma to Holocene.

TKv Felic volcanic rocks (Tertiary and Cretaceous)—Limonite-stained porphyritic andesite-quartz felsite flow or tuff and fragmental silicic flow or vent breccia.

METAMORPHIC ROCKS

Metasedimentary rocks

Ddm Dolostone and marble (Devonian)—Medium- to dark-gray-weathering, black to dark-gray dolostone and marble containing tabulate and rugose corals, stromatopora, brachiopods, rare bryozoa, and conodonts.

DChm Black metallimestone and marble (Devonian through Cambrian)—Black to dark-gray metallimestone, marble, and subordinate dolostone exposed on sea cliffs of Kotzebue Sound, and black to dark-gray marble and subordinate basaltic marble, calcareous schist, and mafic schist exposed in eastern part of Solomon 1° x 3° quadrangle; contains conodonts of Cambrian, Ordovician, Silurian, and Devonian age.

DCKs Calcareous schist of Kowalik Mountain (Devonian through Cambrian)—Medium-grained quartz-calcite-white mica-chlorite-albite-graphite schist; relict crossbedding and graded bedding; interlayered with unit DChm.

Sd Dolostone (Silurian)—Light-gray-weathering, light- to dark-gray, fine-grained dolostone and subordinate black dolostone and marble.

Od Dolostone (Ordovician)—Pink to light-gray, or tan-weathering, gray to tan, fine-grained dolostone; relict sedimentary features include color mottling (reflecting bioturbation), zebra dolomite, and fenestral fabric.

Oim Impure chlorite marble (Ordovician)—Buff- to orange-weathering, well-foliated, impure marble to calc-schist; impurities most commonly chlorite, albite, and white mica; contains lenses and layers of chlorite and white marking foliation and fold surfaces, especially abundant in lower parts of unit; massive light-green bodies of metabasite found at base of unit; Ordovician conodonts obtained from dolostone boudin in upper part of unit.

Oc Casadeppa Schist (Ordovician)—Light-green and greenish-brown mafic calc-schist, and metabasite; lithologies variable but dominated by mafic and calcareous components interlayered on a centimeter to meter scale; mafic rocks contain glaucophane, actinolite, albite, chlorite, garnet, epidote, and sphene.

Ocx Mixed rocks unit (Ordovician and Cambrian)—Interlayered pure and impure marble, quartz-graphite schist, pelite, calcareous schist, and mafic schist; gray and orange-weathering marble and black-weathering quartz-graphite schist dominate; quartz-graphite schist known only in this unit; locally contains metabasite boudins similar to those found in the Casadeppa Schist; recrystallized radiolarians found locally; conodonts of Ordovician age obtained from upper part of unit.

Cd Dolostone (Cambrian)—Light- to medium-gray to pinkish-orange dolostone; contains a few percent quartz and white mica; contains Cambrian lapworthellids (a phosphatic microfossil).

CpCs Solomon Schist (Cambrian?) and Precambrian)—Resistant, well-foliated, quartz-rich schist, predominantly pelitic with subordinate calc-schist; commonly, 1- to 2-cm-thick bands of quartz are interlayered with micaceous minerals and trace isoclinal and chevron folds that are axial planar to foliation.

Pzm Marble (Paleozoic)—Light-gray-weathering, white to medium-gray, medium to coarse crystalline marble.

Pzd Dolostone (Paleozoic)—Light-colored, fine-grained featureless dolostone; may include rocks correlative with units Od, Sd, or Ddm.

Metigneous rocks

Psg Metagranitic rocks (Paleozoic)—Foliated metagranite and tonalitic rocks; U-Pb age of 381±2 Ma obtained from easternmost body at Kowalik Mountain.

PzpCf Felic schist (Paleozoic and Precambrian)—Light-orange to light-green, fine- to coarse-grained quartz-feldspar-white mica schist and metacalcic clastic rocks.

High-grade rocks of the Kiguk, Bendeleben, and Darby Mountains

PzpCh High-grade schist, undivided (Paleozoic and Precambrian)—Metasedimentary and metigneous schist above biotite grade; includes lithologies similar to those in units Oim, Oc, Ocx, and CpCs.

PzpCm High-grade marble (Paleozoic and Precambrian)—Light-gray-weathering, coarse crystalline, pure and impure marble.

Rocks of the Kugruk fault zone

MzPs Serpentine (Mesozoic and Paleozoic)—Light-green-weathering, dark-greenish-black serpentine.

MzPm Mylonitic metabasite (Mesozoic and Paleozoic)—Predominantly fine-grained, medium-bluish-gray, foliated metabasite with porphyroclasts of relict igneous clinopyroxene; laminar foliation imparts a millimeter-scale color banding; blue amphibole (crossite) and lawsonite present in northern part of unit; actinolite and epidote in southern part; also subordinate dark-green, dark-red, and dark-gray vesicular metabasalt with epidote, pumpellyite, and chlorite in rare fault slices.

TRACTS FAVORABLE FOR LOW-SULFIDE GOLD-QUARTZ VEINS

MAPS SHOWING METALLIC MINERAL RESOURCES OF THE BENDELEBEN AND SOLOMON QUADRANGLES, WESTERN ALASKA

By
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1993