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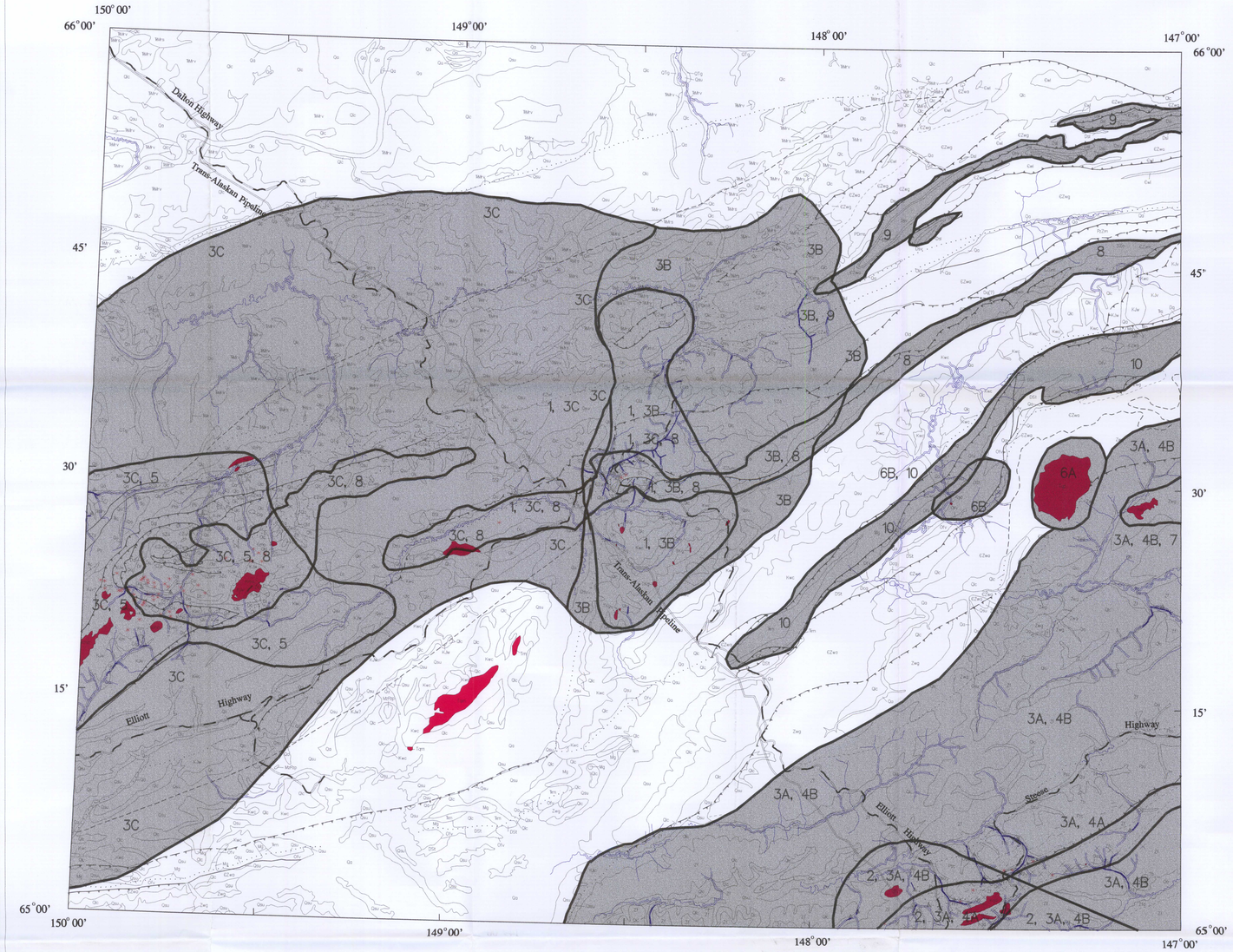
97-484-B



SCALE 1:250,000

5 0 5 10 15 20 25 30 KILOMETERS

5 0 5 10 15 20 STATUTE MILES

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DEFINITION OF MAP UNITS

UNCONSOLIDATED DEPOSITS

- Qa — Alluvium (Holocene)
- Qg — Reworked creek gravels in placer mining areas (Holocene)
- Qlc — Loess and colluvium (Holocene)—Includes minor upland alluvium
- Qsu — Reworked silt and organic deposits, undivided (Holocene)—Includes swamp deposits

BEDROCK

Schwatka–Rampart area

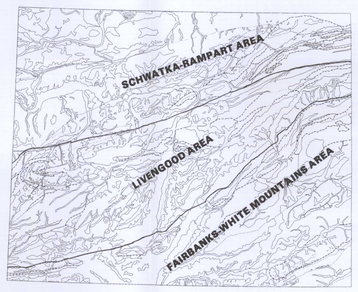
- QTg — Gravel, sand, and silt (Holocene to Pliocene?)—Poorly consolidated deposits
- Tvs — Volcanic and sedimentary rocks, undivided (Eocene)—Conglomerate, sandstone, shale, and basalt
- Ka — Alaskite (Late Cretaceous)—Exposed at Raven Creek Hill
- Rampart Group (Triassic to Mississippian)—Consists of:
- TMrv — Volcanic rocks—Intrusive and extrusive mafic igneous rocks; a few intermixed sedimentary rocks
- TMrs — Sedimentary rocks—Argillite, chert, graywacke, shale, and limestone
- MzPzr — Raven Creek Hill unit (Mesozoic or Paleozoic)—Metasedimentary gneiss, mica schist, phyllite, and hornfels
- PDmz — Metamorphic and sedimentary rocks, undivided (Permian? to Devonian?)—Black and greenish-gray siliceous slate, chert, siltstone, debris flows, and greenstone
- Schwatka unit (Middle and Early Devonian)—Consists of:
- Dsv — Mafic volcanic rocks and minor clastic sedimentary rocks
- Dsl — Limestone
- Wickersham unit (earliest Cambrian and Late Proterozoic)— Unit age ranges into the Hadryan. Consists of:
- €wl — Dark-gray carbonaceous limestone
- €Zwa — Maroon and green argillite, grit, quartzite, siltite, graywacke, and phyllite
- €Zwg — Grit, quartzite, phyllite, and slate—Differs from other grit units in that it contains chert. Includes limestone interbeds that lithologically resemble unit €wl

Livengood area

- QTg — Gravel, sand, and silt (Holocene to Pliocene)—Poorly consolidated deposits
- Tqm — Quartz monzonite (Paleocene)—Tolovana Hot Springs pluton
- Tm — Monzonite(?) or Monzodiorite(?) (Paleocene?)—Northeast of Tolovana Hot Springs pluton
- TKm — Monzonite (Tertiary and (or) Cretaceous)—Cascades Ridge pluton
- TKg — Felsic granitic rocks (Tertiary and (or) Cretaceous)—Small intrusive bodies in the upper Wilber Creek area
- Kmo — Quartz monzonite, monzonite, and syenite (Late or Cretaceous)—Sawtooth, Wolverine, Elephant Mountains, and Heron Creek plutons
- Km — Metz unit (Late Cretaceous?)—Siltstone, mudstone, graywacke, quartzose sandstone, and plant-fragment-bearing siltstone
- Kwc — Wilber Creek unit (Early Cretaceous; Aptian)—Shale siltstone, graywacke, conglomeratic graywacke, and conglomerate
- KJw — Wolverine unit (Early Cretaceous and (or) Jurassic)—Quartzite
- KJv — Vrain unit (Early Cretaceous and (or) Jurassic)—Pyritiferous shale and minor siltstone
- Tc — Black shale and chert (Triassic)
- Ts — Calcareous phosphatic shale and limestone (Triassic)—Includes minor calcareous sandstone and granule conglomerate
- MzPzp — Phyllitic schist, amphibolite, quartzite, and diorite (Mesozoic or Paleozoic)
- Ps — Sedimentary rocks (Permian)—Argillite, siltstone, sandstone, and minor conglomerate
- Pzs — Greenish-gray siliceous slate, quartzite, chert, and greenstone (late Paleozoic)
- Dq — Quak unit (Late Devonian)—Conglomerate, phyllite, calc-phyllite, siltstone, and sandstone. Includes limestone buildups (!) at base of unit
- Dt — Troublesome unit (Devonian?)—Argillite, chert, and mafic intrusive and extrusive rocks
- Dc — Cascades Ridge unit (Middle Devonian)—Shale, siltstone, sandstone, conglomerate, and minor limestone
- DSl — Lost Creek unit (Devonian and Silurian)—Limestone and varied sedimentary rocks
- Old — Livengood Dome Chert (Late Ordovician)—Chert and siliceous slate with rare greenstone and limestone
- SZa — Army Creek unit (Silurian? to Late Proterozoic?)—Siliceous dolomite, chert, and basaltic greenstone and minor limestone, shale, and siltstone
- PzZm — Mafic igneous rocks (Paleozoic and (or) Late Proterozoic)—Includes minor interbedded sedimentary rocks
- €Zum — Ultramafic and mafic rocks (Early Cambrian and (or) Late Proterozoic)—Serpentinite and greenstone intruded by gabbro and diorite
- Wickersham unit (earliest Cambrian and Late Proterozoic)—Unit ranges into Hadryan. Consists of:
- €wl — Dark limestone—Sparsely or non-graveous limestone
- €Zwa — Maroon and green argillite, phyllite, quartzite, graywacke, siltite, and phyllite—Unit is characterized by the relative lack of grit except in the far western part of the quadrangle

Fairbanks–White Mountains area

- QTg — Gravel, sand, and silt (Holocene to early Tertiary)—Poorly consolidated deposits
- Tb — Olivine basalt (Tertiary)
- Tgp — Porphyritic granite (Paleocene)—Cache Mountain pluton
- TKg — Felsic granitic rocks (Tertiary and (or) Cretaceous)—Vault pluton
- Ks — Syenite (Late Cretaceous)—Roy Creek stock
- Kg — Granite (Late Cretaceous)—Pedro Dome and rocks in its vicinity. Intrudes unit Kgd
- Kgd — Granodiorite (Late Cretaceous)—Pedro Dome and rocks in its vicinity
- Tem — Mafic igneous rocks (Triassic)—Gabbro and diabase sills and dikes. Intrudes the Globe unit
- Mg — Globe unit (Mississippian)—Vitreous quartzite, phyllite, and slate
- Dcg — Chert–pebble conglomerate, graywacke, and slate (Devonian?)
- DSt — Tolovana Limestone (Middle Devonian to Early(?) Silurian)—Limestone and rare dolomite
- Olv — Fossil Creek Volcanics (Late to Early Ordovician)—Alkali basalt, agglomerate, and gabbro. Also includes shale, chert, and limestone; all intruded by gabbro
- Pzc — Chatanika unit (Paleozoic)—Allochthonous, garnet-bearing quartz–biotite–muscovite schist, and quartzite. Primarily epidote–amphibolite facies rocks, but also includes eclogitic rocks
- Wickersham unit (earliest Cambrian and Late Proterozoic)—Unit age ranges into the Hadryan. Consists of:
- €Zwa — Maroon and green argillite, grit, quartzite, siltite, graywacke, phyllite, and dolomite —Includes thin beds of dark limestone, which are probably equivalent to unit €wl, as mapped in other areas, but which are greatly restricted and are not mapped separately in this area. Intruded by gabbro in and near the White Mountains
- Zwg — Grit (Late Proterozoic)—Bimodal quartzite and gray and olive-gray greenschist–facies argillite. Unit age is considered to be Hadryan
- Zf — Fairbanks schist unit (Late Proterozoic)—Green-schist facies muscovite–chlorite schist, quartzite, and phyllite. Locally divided into:
- Zfc — Cleary subunit—Facies characterized by white felsic schist, micaceous quartzite, chloritic or actinolitic greenschist, greenstone, and marble

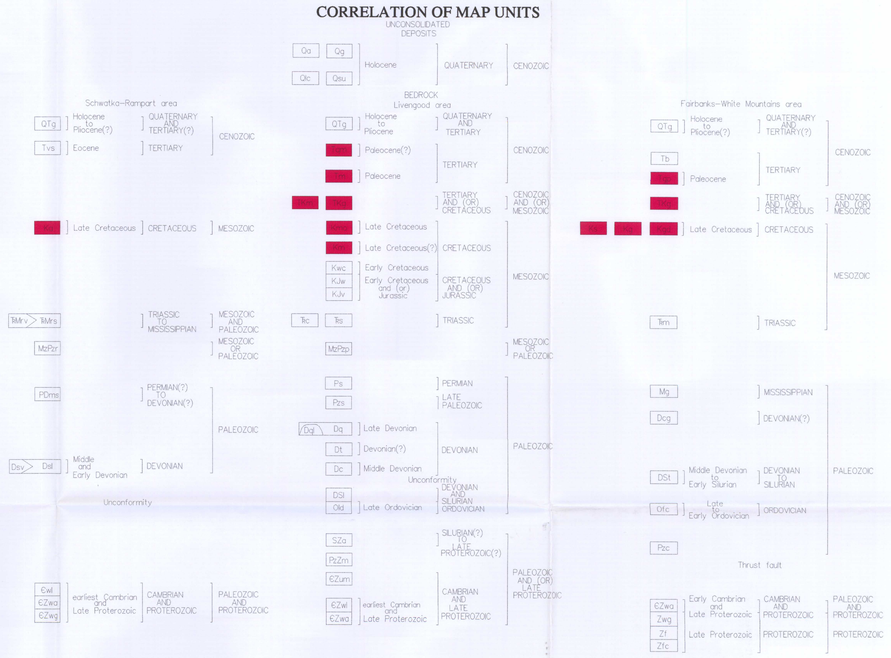


Three-fold division of Livengood Quadrangle used in this report

EXPLANATION

- Contact—Dashed where approximately located; dotted where concealed.
- Fault—Dashed where inferred; dotted where concealed.
- Thrust fault—Sawteeth on upper plate; dashed where inferred.
- Eclogitic boirinne in the Chatanika allochthon.
- Placer-bearing streams—Current or historic operations.
- Placer-bearing streams—Zero to Two miles from gold-bearing sample occurrences.
- Placer-bearing streams—Two to Five miles from gold-bearing sample occurrences.
- Dikes, various compositions and ages.
- Lode occurrence.
- Placer occurrence.

CORRELATION OF MAP UNITS



MAP SHOWING RESOURCE POTENTIAL OF THE LIVENGOOD QUADRANGLE, ALASKA

By

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1997