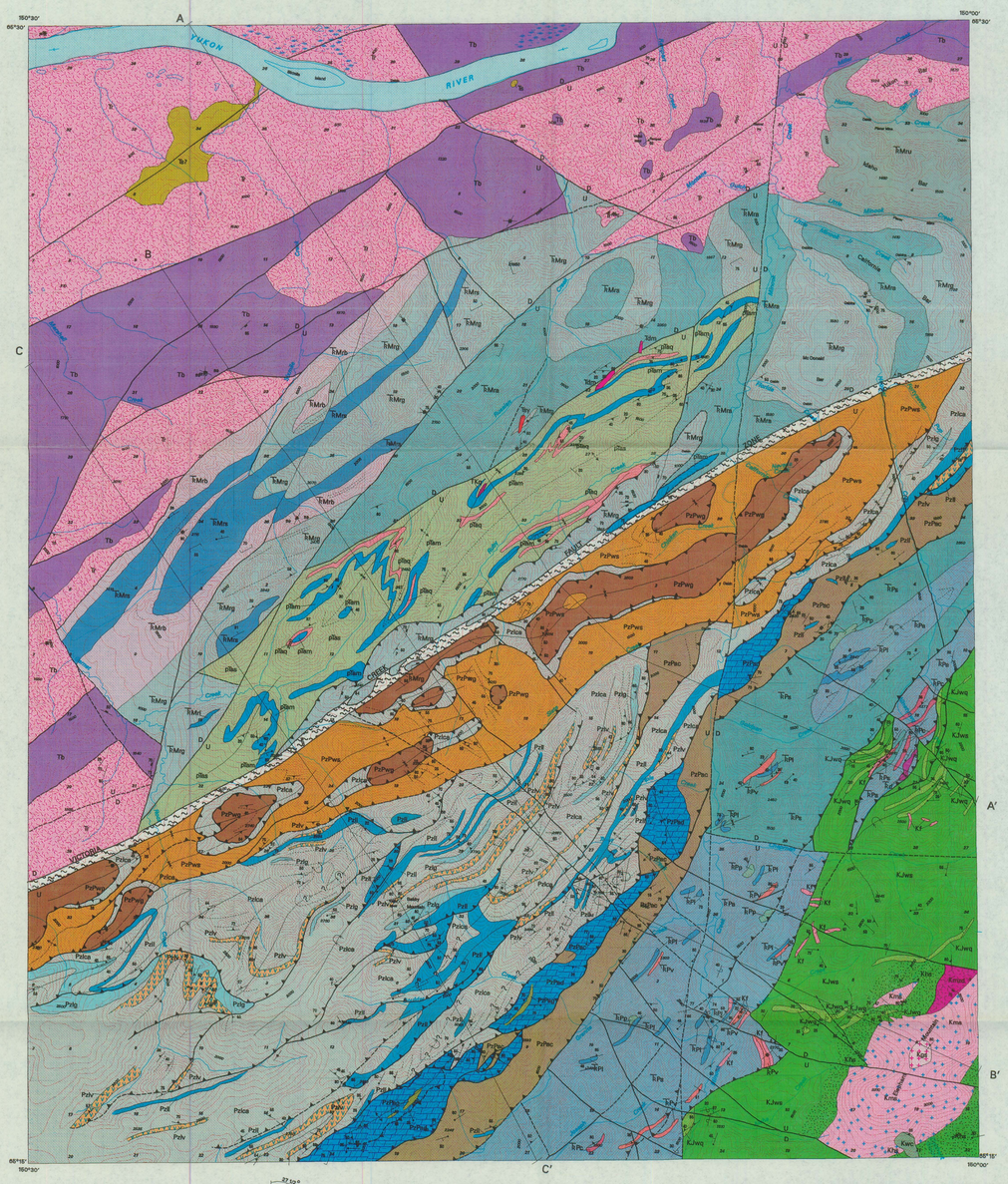
ALASKA DIVISION OF GEOLOGICAL &
GEOPHYSICAL SURVEYS

REPORT OF INVESTIGATIONS 97-15b
REIFENSTUHL AND OTHERS 1997
Explanatory booklet accompanies map



Base modified from U.S. Geological Survey Tanana B-1 Quadrangle, Alaska (1955). Universal Transverse Mercator projection, 1927 North American datum.

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1958

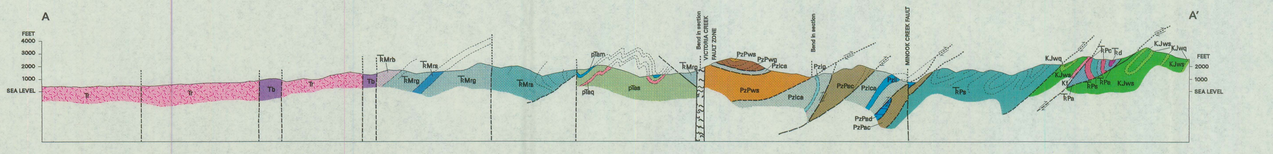
SCALE 1:63,360
1 1/2 0 1 2 3 4 MILES
3000 0 3000 6000 9000 12000 15000 18000 21000 FEET
1 .5 0 1 2 3 4 5 KILOMETERS

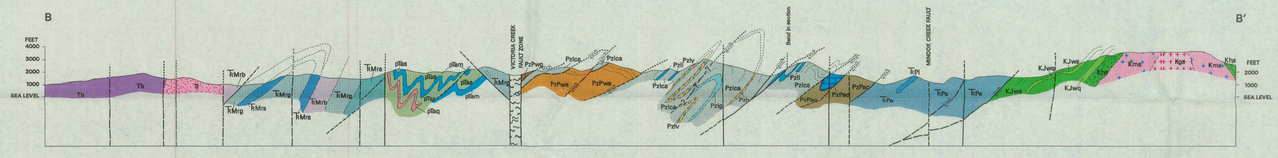
CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

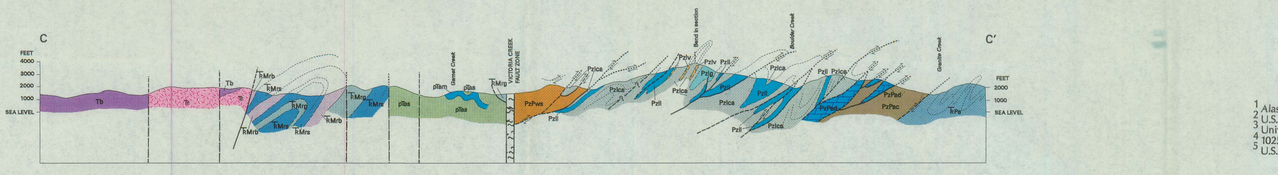
ALASKA
STUDY AREA
MAP LOCATION

Sources of geologic data: Field mapping, all authors (1996); air photo interpretation, D.B. Pinney (1996); 1:250,000 scale mapping of the Tanana Quadrangle, Chapman and others (1982); unpublished data, J.H. Dover and F.R. Weber (1995); Alaska Division of Geological and Geophysical Surveys geochemical data, H. Noyes (Dynamic Regional Native Corporation) and J. Di Marchi (ASA, Inc.) (1997-1998). For technical map review we thank D.H. Pessel (University of Alaska Fairbanks, Geology & Geophysics Department) and R.A. Ewan (Ewan & Associates). Cartographic production with the U.S. Geological Survey, EDITEMAP Agreement #1474-HQ-96-AG. Digital cartography by A.G. Sturmann and B.A. Haug.

Date: 06/13/97

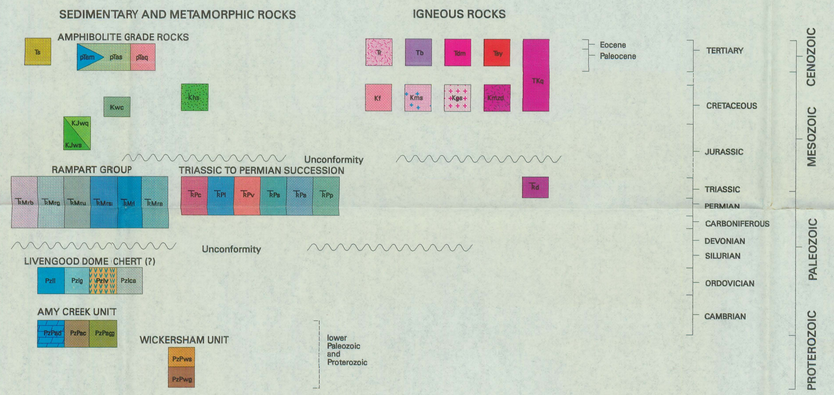




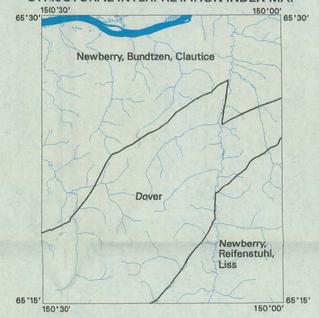


Quaternary not shown in cross-sections

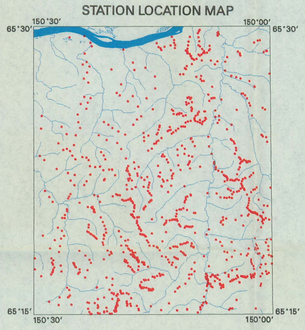
CORRELATION OF MAP UNITS



STRUCTURAL INTERPRETATION INDEX MAP



STATION LOCATION MAP



MAP SYMBOLS

Contact—Dashed where approximately located; queried where inferred or continuation unknown

Victoria Creek Fault Zone—Major dextral strike-slip fault zone connecting Tintina and Kaltag faults; width of crushed zone indicated by cross-hatching based on widths of saddles along the topographic lineament marking the fault zone. Identifiable but structurally detached blocks of various metamorphic and Rampart Group lithologies mapped separately within crushed zone where observed

Thrust Fault—Low- to moderate-angle, brittle to semi-ductile thrust fault, or ductile zone of mylonitic or blasto mylonitic shearing, which internally imbricates a rock sequence or imbricates the tectonic contact between sequences; normally displaces older rocks onto relatively younger ones, except where thrust is "out of sequence" or where bedding-parallel segment of thrust is exposed; dashed where approximately located, queried where inferred or continuation unknown, dotted where concealed

High-angle Normal Fault—Some inferred from geophysical lineament or apparent geophysical offset, or from topographic lineament. Arrow shows direction and amount of dip where known; U, upthrown side, D, downthrown side. Dashed where approximately located, queried where inferred or continuation unknown, dotted where concealed

Bedding trace—Approximate trace of bedding on topographic surface, showing stratigraphic or structural "form"

Fold Axis—Dashed where approximately located; queried where inferred; arrow shows direction of plunge

Anticline

Syncline

Overturned anticline

Overturned syncline

Bedding attitude; shows dip where known

Inclined, vertical, horizontal

Overturned—Bar and ball show facing (top) where known

Cleavage—Mostly axial planar cleavage at low angle to bedding except in axial areas of folds, where pencil cleavage is locally developed; shows dip where known

Inclined, vertical

Metamorphic foliation or schistosity; shows dip where known

Inclined, vertical

Lineation—Includes mineral lineation or streaking, intersection of bedding and foliation, pencil cleavage, crenulation or minor fold axes, slickensides; shows plunge where known

Joint—Shows dip where known

Vertical joint

DESCRIPTION OF MAP UNITS

SEDIMENTARY AND IGNEOUS ROCKS

- Ta — ?Sedimentary rocks
- Tr — ?Rhyolite
- Tb — ?Basalt
- Tqy — ?Quartz syenite dikes
- Tdm — ?Mafic dikes
- TKq — ?Quartz veins

AMPHIBOLITE GRADE ROCKS

- pIam — ?Marble
- pIas — ?Pelitic schist
- pIaq — ?Quartzite

CRETACEOUS AND JURASSIC ROCKS

- Kws — ?Wilber Creek unit
- Khs — ?Hornfelsed sedimentary rocks
- KJwq — ?Wolverine quartzite unit
- KJws — ?Sandstone and shale

ELEPHANT MOUNTAIN PLUTON

- Kgr — ?Granite
- Kms — ?Monzonite
- Kmd — ?Monzodiorite
- Kf — ?Felsic dikes

TRIASSIC TO PERMIAN SUCCESSION

- TRPs — ?Sandstone and shale
- TRPa — ?Argillite
- TRPv — ?Tuff
- TRPl — ?Limestone
- TRPc — ?Chert
- TRPp — ?Pebble conglomerate
- TRd — ?Gabbroic dike

RAMPART GROUP

- TRMra — ?Argillite and chert
- TRMrb — ?Basalt
- TRMrg — ?Gabbro
- TRMrs — ?Sedimentary rocks undifferentiated
- TRMrl — ?Limestone
- TRMru — ?Rampart Group undifferentiated

LOWER PALEOZOIC AND PROTEROZOIC ROCKS
LIVENGOOD DOME CHERT (?)

- PzIca — ?Chert and cherty argillite
- PzIg — ?Graywacke and gritty quartzite
- PzIv — ?Volcanic unit
- PzIl — ?Limestone

AMY CREEK UNIT

- PzPwd — ?Dolostone
- PzPwg — ?Greenstone
- PzPwc — ?Cherty-argillite and chert

WICKERSHAM UNIT

- PzPws — ?Calcareous siltstone and sandstone
- PzPwg — ?Grit and quartzite

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INTERPRETIVE GEOLOGIC BEDROCK MAP OF THE TANANA B-1 QUADRANGLE, CENTRAL ALASKA

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