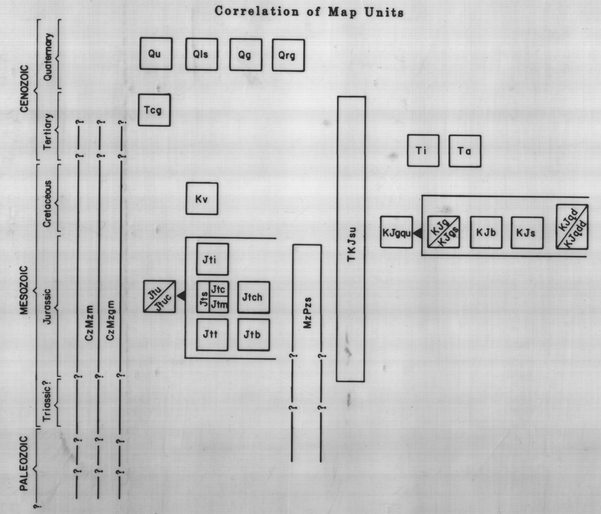
ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

ALASKA OPEN-FILE REPORT AOF-121
PLATE 1 OF 1

Correlation of Map Units



Description of Map Units

Qu SURFICIAL DEPOSITS, UNDIFFERENTIATED; alluvium, colluvium, and glacial deposits.

Qls LANDSLIDE DEPOSITS

Qg GLACIAL ICE

Qrg ROCK GLACIER

Tcg CONGLOMERATE; pebble to boulder conglomerate with mudstone and siltstone matrix, well-rounded clasts. Clast composition includes most older map units.

Ti FELSITE INTRUSIVES; fine-grained hypabyssal felsite plugs and dikes. Typically felsite porphyry and quartz porphyry.

Ta ANDESITE; dikes and plugs of andesite porphyry and andesite.

Kv VALDEZ GROUP; pelitic schist and minor amounts of greenstone. Mostly quartz-sericite-albite±chlorite schist, locally graphitic. Metamorphic grade apparently decreases to south.

KJg GABBRO; coarse- to medium-grained gabbro with dikes and masses of pyroxenite and hornblendite. Composition is mostly calc-plagioclase and pyroxene, but pyroxene-hornblende-plagioclase gabbro is common. Crude layering and cumulate texture are locally common. Low-grade greenschist metamorphism is common, as evidenced by minor epidote and chlorite mineralization.

KJgs GABBRO; highly-sheared gabbro (KJg), locally cataclastic.

KJs SERPENTINITE; lenticular masses and layers of serpentine, serpentinized dunite, and serpentinized peridotite. Chrysotile and talc locally common.

KJv GREENSTONE; metabasalts areally associated with gabbro (KJg) as dikes and large masses.

KJqd QUARTZ DIORITE; large intrusives and structural blocks of medium-grained quartz diorite. Composition is generally plagioclase, quartz, and minor amounts of hornblende and biotite. Quartz grains are typically bluish in color. Similar rocks in adjacent Valdez quadrangle have been dated at 152 m.y. by K/Ar methods (Gary Winkler, USGS, pers. comm.).

KJqdd QUARTZ DIORITE; quartz diorite (KJqd) with numerous mafic dikes, mostly diabase, up to 3 meters thick. Dikes are apparently sheeted, but complex structure disrupts continuity of sheets.

KJgqu GABBRO AND QUARTZ DIORITE, UNDIFFERENTIATED; Plutonic rocks of basic and intermediate composition (KJg and KJqd), with minor amounts of basalt and diabase dikes. Commonly sheared and structurally complex.

Jtu TALKEETNA FORMATION, UNDIFFERENTIATED; volcanic rocks and volcaniclastic sediments, including pyroclastics, tuff, basalt, mudstone, siltstone, sandstone, and conglomerate.

Jtc TALKEETNA FORMATION, CONGLOMERATE; conglomerate and coarse-grained sandstone primarily of volcanic origin, fossiliferous in part.

Jtm TALKEETNA FORMATION, MUDSTONE AND SILTSTONE.

Jtch TALKEETNA FORMATION, CHERT; black, thin-layered chert. Clearly part of Talkeetna Formation in outcrops too small to show at map scale in northern part of map area. Correlation with Talkeetna Formation is assumed for small structural remnants of similar rocks near Nelchina Glacier.

Jtt TALKEETNA FORMATION, TUFF; water-laid tuff, mostly thin layered. Locally altered by hydrothermal event causing intense iron staining.

Jtb TALKEETNA FORMATION, BASALT; small outcrops of basalt and metabasalt, apparently genetically associated with Talkeetna Formation. Differentiation from KJb uncertain in southern part of map area.

CzMzm TECTONIC MELANGE; exotic blocks and fragments of plutonic and volcanic rock in a matrix of cataclasite and mylonite. Fragments appear to be derived from KJg, KJb, KJqd, and Jtu units, but other rock types common. Differentiation from other units is somewhat arbitrary because of structural complexity.

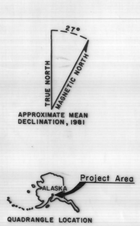
CzMzgm GREENSTONE MELANGE; large masses of tectonic melange composed primarily of metabasalts and subordinate amounts of pyroclastic rocks. Probably includes blocks of Jtu, but other units may be present.

MzPzs METASEDIMENTARY ROCKS; conglomerate, mudstone, siltstone, and volcaniclastic rocks with minor amounts of argillaceous marble. Metamorphosed to epidote amphibolite facies; locally gneissic. Appears to be intruded by gabbro sequence (KJg), but age relation uncertain because of structural complexity. Locally contains disseminated sulfides .

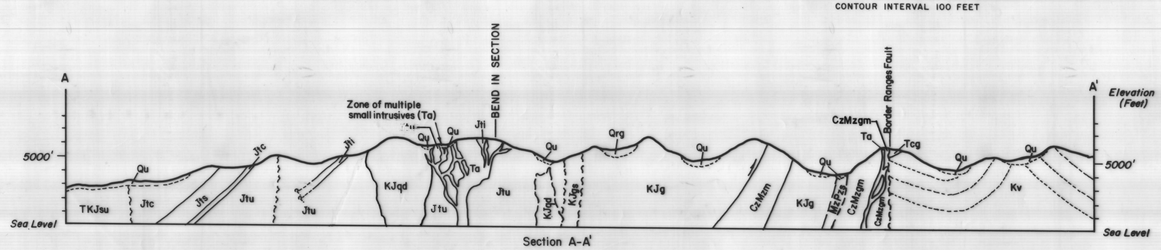
TKJsu SEDIMENTARY ROCKS, UNDIFFERENTIATED; primarily sandstone, mudstone and siltstone of Matanuska and Chickaloon Formations; may include rocks correlative with Talkeetna Formation (Jtu).

Map Symbols

- Contact; dashed where approximate or inferred, dotted where covered.
- Fault; dashed where approximate or inferred, dotted where covered.
- Thrust fault; sawteeth on upper plate.
- 45 Strike and dip of foliation.
- 50 Strike and dip of bedding.
- Vertical foliation.
- 50 Strike and dip of bedding or foliation; apparent from a distance.
- Overturned anticline.
- Overturned syncline.
- Syncline; showing direction of plunge.



Base from U.S. Geological Survey, Anchorage C-1, C-2, (1960), D-1, (1948), D-2, (1952) Quadrangles, Alaska.



Section A-A'

Geology mapped by: G.H. Pessel, 1979, 1980
M.W. Henning, 1979, 1980
L.E. Burns, 1979, 1980
D.L. McGee, 1979
T.L. Pavlis, 1979
T.K. Bundtzen, 1980
R.D. Allely, 1980

Acknowledgements

We are indebted to Gary Winkler, Arthur Grantz, Travis Hudson, and George Plafker of the U.S. Geological Survey for regional information about the Border Ranges fault and various units within areas adjacent to the map area. We are grateful to J.E. Decker of the DGGS for review and comment.

Reference

MacKevett, E.M., Jr., and Plafker, George, 1974, The Border Ranges fault in south-central Alaska: U.S. Geological Survey Journal of Research, v. 2, no. 3, p. 323-329.

PRELIMINARY GEOLOGIC MAP OF PARTS OF THE ANCHORAGE C-1, C-2, D-1, AND D-2 QUADRANGLES, ALASKA

By
G.H. Pessel, M.W. Henning, and L.E. Burns

1981