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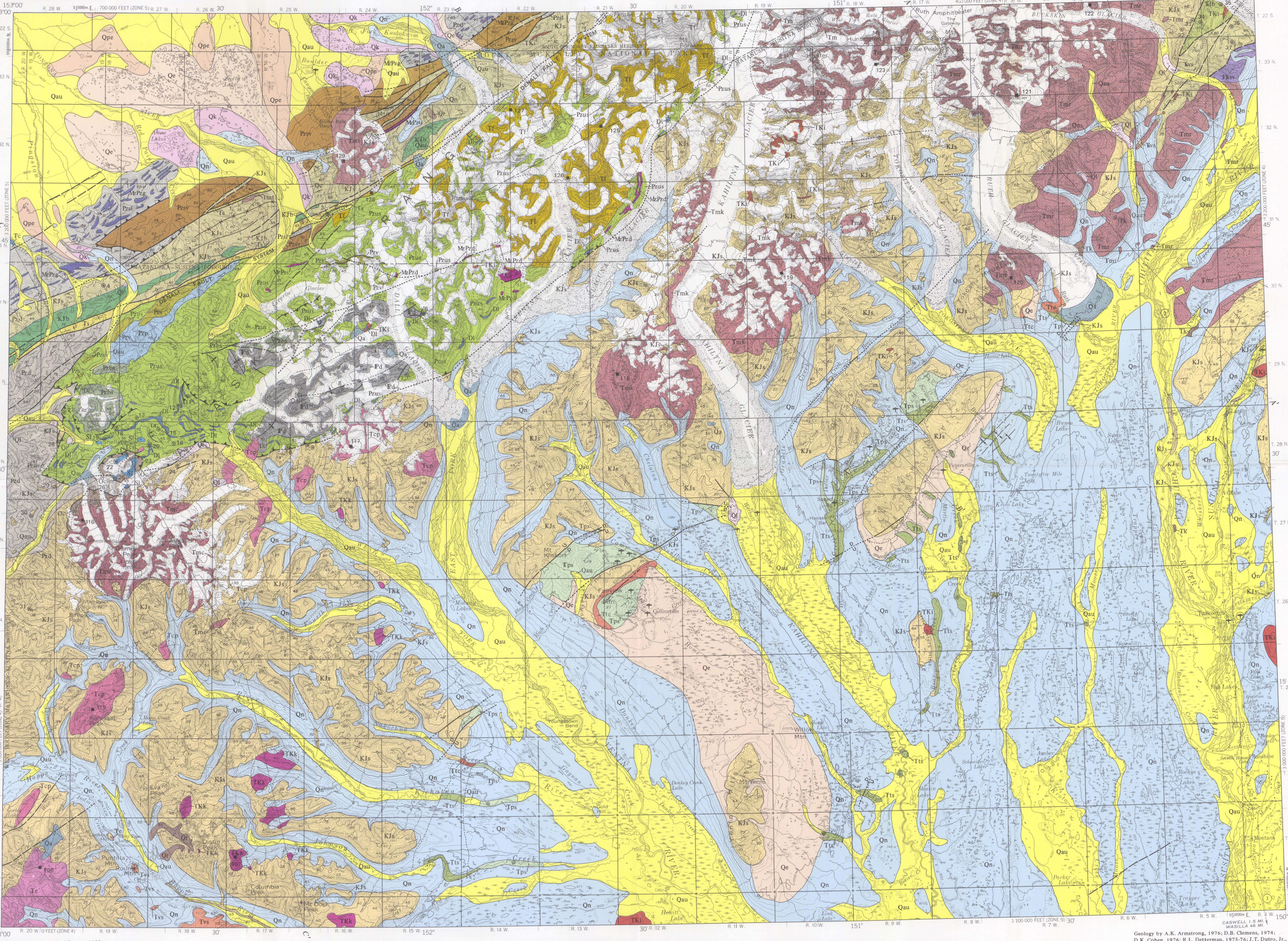
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS INVESTIGATIONS SERIES
MAP I-1174



Base from U.S. Geological Survey, 1958
100,000-foot grids based on Alaska coordinate system, zones 4 and 5
10,000-meter Universal Transverse Mercator grid ticks, zone 5

SCALE 1:250000

5 0 5 10 15 20 25 MILES

5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 200 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
1980 MAGNETIC DECLINATION AT SOUTH EDGE OF SHEET VARIES FROM 24° to 25°30' EAST

Geology by A.K. Armstrong, 1976; D.B. Clemens, 1974; D.K. Cohen, 1976; R.L. Detterman, 1975-76; J.T. Dutro, Jr., 1976; G.D. Eberlein, 1968; I.F. Ellersieck, 1975; R.L. Elliot, 1967; W.J. Glude, 1975; W.B. Hamilton, 1975; D.L. Jones, 1974-75; M.A. Lanphere, 1970; S.W. Nelson, 1975-76; J.C. Ratte, 1974-75; B.L. Reed, 1967-68, 1970, 1973-76; D.H. Richter, 1974; and W.N. Sharp, 1974

Table 1.—*Location and age of selected fossil collections in the Talkeetna quadrangle.*

Map No.	Field No.	Fossils	Age	Map Symbol	Location	Identification	Remarks
1	67AR425 74AR74	Plants	Paleocene(?)	Ts	T. 31 N., R. 17 W.	J. A. Wolfe	
2	76ARh219	Plants	Paleocene(?)	Ts	T. 31 N., R. 16 W.	J. A. Wolfe	
3	74AR129	Brachiopods	Late Devonian (Frasnian?)	Pzus	T. 31 N., R. 16 W.	J. T. Dutro, Jr.	
4	74AR29 74AR59	Pelecypods, cephalopods	Early Cretaceous	KJs	T. 30 N., R. 19 W.	D. L. Jones	
5	74AR77	Corals	Silurian or Devonian (probably Middle Devonian)	Pzus	T. 30 N., R. 16 W.	W. A. Oliver, Jr.	Limestone clasts in conglomerate
6	76AR132	Corals	Middle or Late Devonian (probably Frasnian)	Dl	T. 30 N., R. 15 W.	W. A. Oliver, Jr.	
7	75ANs71	Echinoderms, brachiopods, pelecypods, trilobites	Late Devonian(?)	Pzus	T. 29 N., R. 15 W.	J. T. Dutro, Jr.	
8	76AR24	Plants	Middle Pennsylvanian	IPd	T. 29 N., R. 16 W.	S. H. Mamay	
9	74AR53	*Inoceramus* limestone	Early Cretaceous	KJs	T. 28 N., R. 16 W.	D. L. Jones R. L. Detterman	
10	75ANs74	Corals	Silurian or Devonian	Dl	T. 28 N., R. 17 W.	W. A. Oliver, Jr.	
11	74ARa61	Corals	Middle or Late Devonian (probably Frasnian)	Dl	T. 29 N., R. 18 W.	W. A. Oliver, Jr.	
12	74AR25	Corals, brachiopods	Middle and Late Devonian	Dl	T. 29 N., R. 18 W.	W. A. Oliver, Jr. J. T. Dutro, Jr.	
13	74AR135	Corals, gastropods, brachiopods, echinoderms	Late Devonian (Frasnian)	Dl	T. 29 N., R. 18 W.	W. A. Oliver, Jr. J. T. Dutro, Jr.	Collections from section 300 m thick
14	75AR79	Brachiopods	Late Middle Devonian(?)	Pzus	T. 28 N., R. 18 W.	J. T. Dutro, Jr.	
15	75ANs79A	Echinoderms	Late Mississippian	Pzus	T. 28 N., R. 18 W.	A. K. Armstrong	
16	75AR41	Echinoderms, foraminifers	Middle Pennsylvanian	Pzus	T. 28 N., R. 18 W.	A. K. Armstrong	
17	75AR67	Brachiopods, trilobites, echinoderms, corals	Late Early or early Middle Devonian	Pzus	T. 28 N., R. 18 W.	J. T. Dutro, Jr. W. A. Oliver, Jr.	Locally derived slump block
18	74AR43 74AR44	Brachiopods, corals, gastropods, echinoderms	Late Devonian (Frasnian)	Dl Pzus	T. 28 N., R. 19 W.	J. T. Dutro, Jr. W. A. Oliver, Jr.	Collections from section 225 m thick
19	74AHw21 74AHw23	Brachiopods	Late Devonian (Frasnian?)	Dl	T. 28 N., R. 19 W.	J. T. Dutro, Jr.	
20	76AR42	Corals	Middle or Late Devonian (probably Frasnian)	Dl?	T. 28 N., R. 18 W.	W. A. Oliver, Jr.	
21	74AR83d 74AR83c	Graptolites	Early and early Middle Ordovician	Oc	T. 28 N., R. 19 W.	Claire Carter	
22	74AR83	Algae, corals	Silurian(?)	Sl	T. 28 N., R. 19 W.	J. T. Dutro, Jr.	
23	76AR43	Corals	Middle Devonian	Dl?	T. 28 N., R. 18 W.	J. T. Dutro, Jr.	
24	76ANs16 76ANs17 76ANs18	Pelecypods	Early Cretaceous (Valanginian)	KJs	T. 28 N., R. 18 W.	D. L. Jones	
25	76AR34	Graptolites	Early and Middle Silurian	Sl	T. 28 N., R. 19 W.	Claire Carter	
26	76AR29A 76AR29B	Graptolites	Early and Middle Ordovician	Oc	T. 28 N., R. 19 W.	Claire Carter	
27	74ARa38B	Echinoderms	Early Middle Devonian(?)	Pzus	T. 29 N., R. 19 W.	J. T. Dutro, Jr.	
28	76AR38A	Pelecypods, brachiopods, cephalopods	Early Jurassic	KJs	T. 28 N., R. 19 W.	R. W. Imlay	
29	76AR17	Cephalopods, brachiopods	Early Jurassic	KJs	T. 28 N., R. 20 W.	R. W. Imlay	
30	76AR30B	Pelecypod fragments	Jurassic or Cretaceous	KJs	T. 27 N., R. 20 W.	R. W. Imlay	
31	74AR49	Pelecypod	Cretaceous(?)	KJs	T. 26 N., R. 20 W.	D. L. Jones	
32	76ANs56D	Pelecypods	Early Cretaceous (Valanginian)	KJs	T. 22 S., R. 14 W.	D. L. Jones	
33	76ANs55E	Pelecypod fragment, cephalopod	Early Cretaceous (Hauterivian to Barremian)	KJs	T. 22 S., R. 14 W.	D. L. Jones	
34	76ANs53C	Pelecypods	Late Triassic (late Norian)	T̄Rlb	T. 22 S., R. 14 W.	N. J. Silberling	
35	76AR240	Hydrozoans, pelecypods	Late Triassic (late Norian)	T̄Rlb	T. 22 S., R. 13 W.	N. J. Silberling	
36	76ANs59B	Pelecypods	Late Triassic	T̄Rvs	T. 22 S., R. 13 W.	N. J. Silberling	
37	76ANs58D	Hydrozoans	Late Triassic (late Norian)	T̄Rvs	T. 33 N., R. 4 W.	N. J. Silberling	

DEFINITION OF MAP UNITS

SURFICIAL DEPOSITS

ALLUVIAL AND MASS-WASTING DEPOSITS
- Ql — Young and old landslide deposits
- Qau — Alluvium, undivided
- Qr — Active and recently active rock glaciers and associated talus aprons

GLACIAL DEPOSITS
- Qa — Drift of the Alaskan Glaciation
- Qn — Drift of the Naptowne Glaciation
- Qk — Drift of the Knik Glaciation
- Qe — Drift of the Eklutna Glaciation
- Qpe — Drift of pre-Eklutna age

NORTH OF DENALI FAULT

Sedimentary and volcanic rocks
- Tc — COAL-BEARING ROCKS
- Ts — CONTINENTAL SEDIMENTARY ROCKS
- KJb — PILLOW BASALT
- KJs — UNDIVIDED MARINE SEDIMENTARY ROCKS
- Pzsl — SHALE AND LIMESTONE
- Pzsv — QUARTZITE, SEMISCHIST, AND META-VOLCANIC ROCKS

Intrusive and ultramafic rocks
- Tmt — TONZONA PLUTON
- TKi — UNDIVIDED INTRUSIVE ROCKS
- MzPzg — GABBRO AND QUARTZ DIORITE
- MzPzu — SERPENTINITE

SOUTH OF DENALI FAULT

Sedimentary and volcanic rocks
- Tk — KENAI GROUP, UNDIVIDED
- Tps — STERLING(?) FORMATION
- TYONEK(?) FORMATION
  - Tts — Sandstone member
  - Ttc — Conglomerate member
- Tvs — UNDIVIDED VOLCANIC AND SEDIMENTARY ROCKS
- KJs — UNDIVIDED MARINE SEDIMENTARY ROCKS
- Pzbs — PILLOW BASALT
- Pzv — VOLCANIC AND SEDIMENTARY ROCKS
- IPd — CONGLOMERATE OF MOUNT DALL
- Pzus — UNDIVIDED SEDIMENTARY ROCKS
  - Dl — Limestone
  - Pzp — Phyllite
- Sl — LIMESTONE
- Oc — CHERT AND SHALE
- Pzd — SEDIMENTARY ROCKS OF DILLINGER RIVER

Intrusive and ultramafic rocks
- Tf — FORAKER PLUTON
- McKINLEY SEQUENCE
  - Tm — McKinley pluton
  - Tmc — Cathedral pluton
  - Tmk — Kahiltna pluton
  - Tmr — Ruth pluton
- Te — GRANODIORITE OF MOUNT ESTELLE
- Tcp — COMPOSITE PLUTONS
- TKk — KICHATNA PLUTONS
- TKi — UNDIVIDED INTRUSIVE ROCKS
- MzPzi — UNDIVIDED INTRUSIVE ROCKS
- MzPzd — UNDIVIDED DUNITE AND SERPENTINITE

Chulitna sequence
- JT̄Rsv — SEDIMENTARY AND VOLCANIC ROCKS
- T̄Rvs — VOLCANIC AND SEDIMENTARY ROCKS
- T̄Rlb — LIMESTONE AND BASALT

Note: Commonly used geologic symbols are printed on the map jacket; a separately printed list is available on request from the U.S. Geological Survey.

CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS

Ql	Qau	Qr	Qa	Holocene	QUATERNARY
			Qn	Holocene and Pleistocene	
			Qk	Pleistocene	
			Qe		
			Qpe		

NORTH OF DENALI FAULT

Sedimentary and volcanic rocks
- Tc — Miocene and (or) Oligocene
- Ts — Paleocene
- Angular unconformity
- KJb, KJs — Lower Cretaceous and Jurassic(?)
- Fault contact
- Pzsl
- Fault contact
- Pzsv

Intrusive and ultramafic rocks
- Tmt — Lower Tertiary
- TKi — Lower Tertiary and (or) Upper Cretaceous
- MzPzg, MzPzu

TERTIARY; CRETACEOUS; CRETACEOUS AND JURASSIC(?); MESOZOIC AND (OR) PALEOZOIC; LOWER PALEOZOIC

SOUTH OF DENALI FAULT

Sedimentary and volcanic rocks
- Tk; Tps — Pliocene
- Tts, Ttc — Miocene
- Tvs
- Angular unconformity
- KJs — Cretaceous and Lower Jurassic
- Angular unconformity and fault contact
- Pzbs; IPd — Middle Pennsylvanian
- ?; Pzv; Dl, Pzus, Pzp — Upper and Middle Devonian
- Sl
- Oc
- Pzd

Intrusive and ultramafic rocks
- Tf — Middle Tertiary
- Tm, Tmc, Tmk, Tmr — Lower Tertiary
- Te, Tcp, TKk, TKi — Lower Tertiary and (or) Upper Cretaceous
- MzPzi, MzPzd

TERTIARY; CRETACEOUS; CRETACEOUS AND JURASSIC; MESOZOIC AND (OR) PALEOZOIC; PENNSYLVANIAN; CARBONIFEROUS AND DEVONIAN; SILURIAN; ORDOVICIAN; PALEOZOIC — PALEOZOIC

Chulitna sequence Sedimentary and volcanic rocks
- JT̄Rsv — JURASSIC AND TRIASSIC
- Fault contact
- T̄Rvs — TRIASSIC
- Fault contact
- T̄Rlb

Contact—Approximately located; dotted where concealed

Fault—Dashed where approximate or inferred, dotted where concealed; U, upthrown side; D, downthrown side. Arrows indicate relative lateral movement

Thrust or high-angle reverse fault—Dashed where approximately located or inferred; dotted where concealed. Sawteeth on upthrown plate

Folds—Showing trace or axial plane. Dotted where concealed. Only larger well-documented folds shown; folds in cross sections depicted diagrammatically

Anticline — Syncline

Overturned syncline

Strike and dip of beds or flows. Dashed symbols indicate attitudes estimated from distant field or airborne observations, and, unless otherwise indicated, tops of strata are unknown

65 Inclined — Vertical

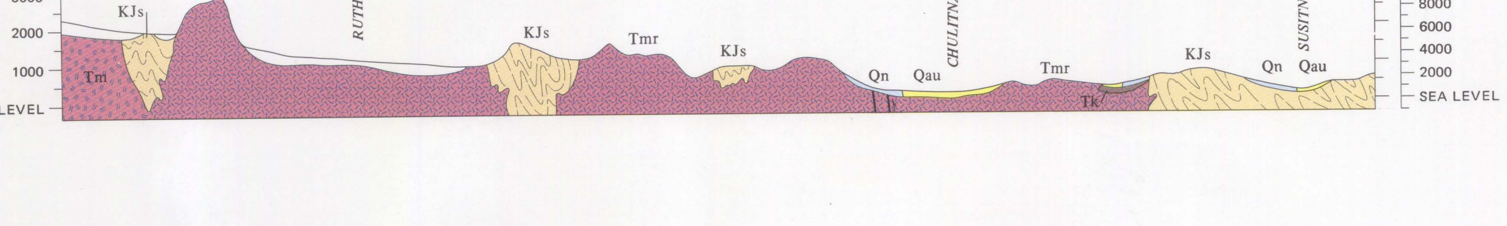
Horizontal — 85 Overturned

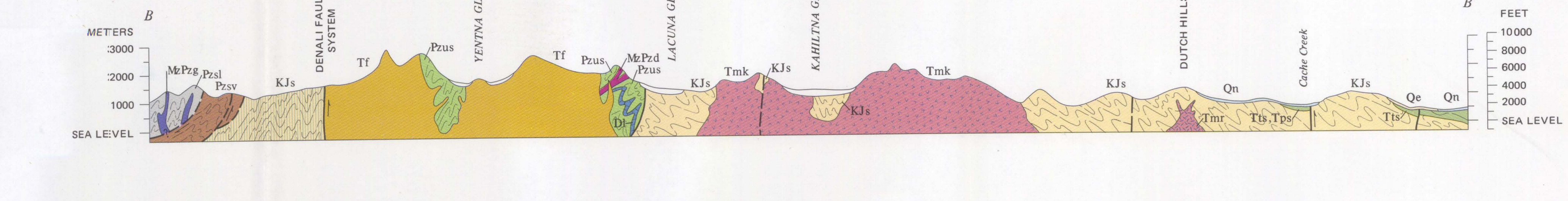
120 ■ K-Ar age locality—Plutonic rock dates described and discussed by Reed and Lanphere (1973a). Numbers refer to samples given in Reed and Lanphere (1972)

15 ⊙ Fossil locality—See table 1

Inferred Tertiary volcanic center

Prominent dike





Quaternary deposits omitted from sections in areas where deposits are too thin to show accurately at this scale

VERTICAL EXAGGERATION X 2

Interior-Geological Survey, Reston, Va.-1980-G79210

GEOLOGIC MAP OF THE TALKEETNA QUADRANGLE, ALASKA

By
Bruce L. Reed and Steven W. Nelson

1980

For sale by Distribution Section, U.S. Geological Survey, Federal Bldg., Box 12, 101 Twelfth Avenue, Fairbanks, AK 99701, and Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225.
Explanatory pamphlet accompanies map.