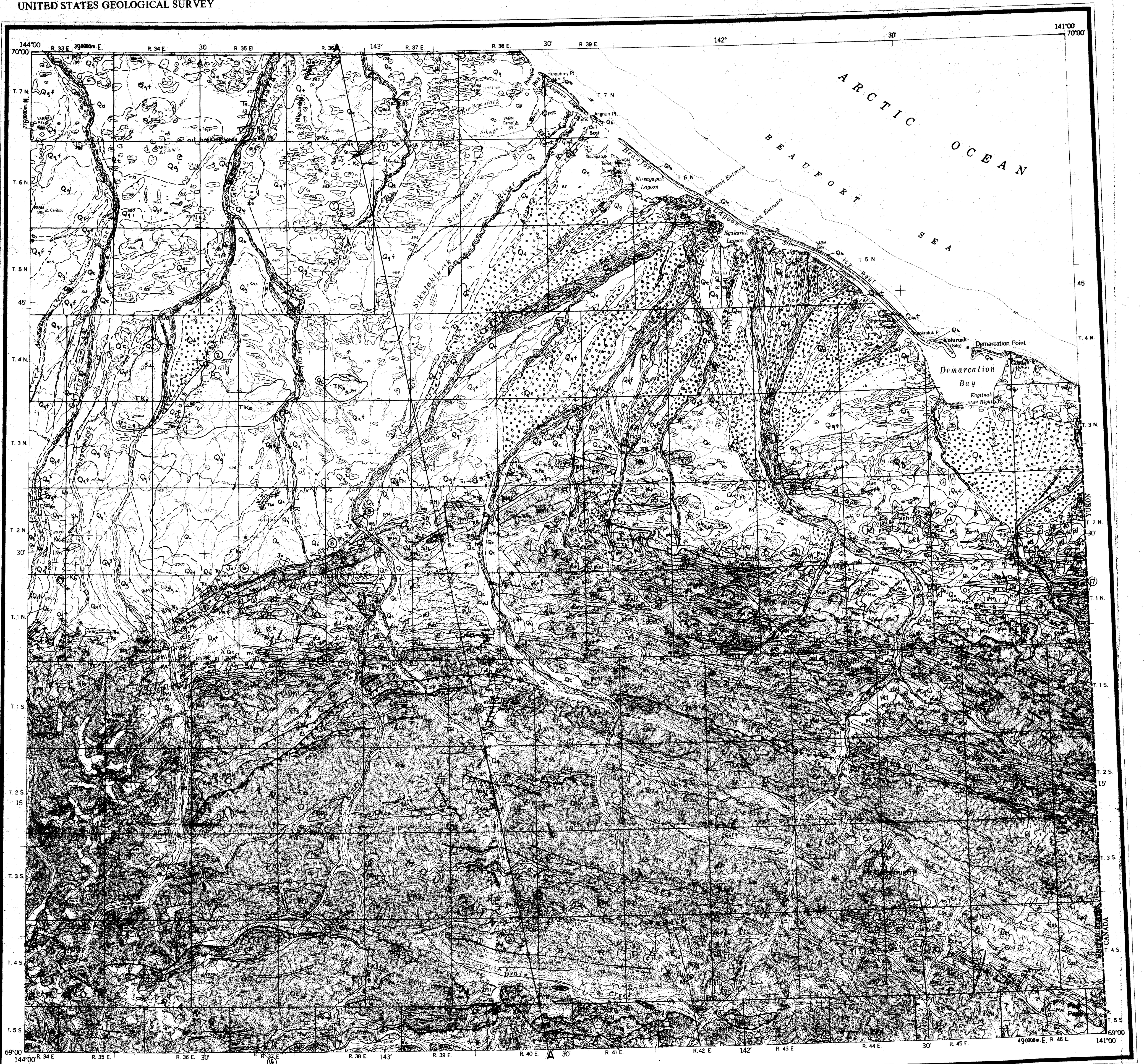
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

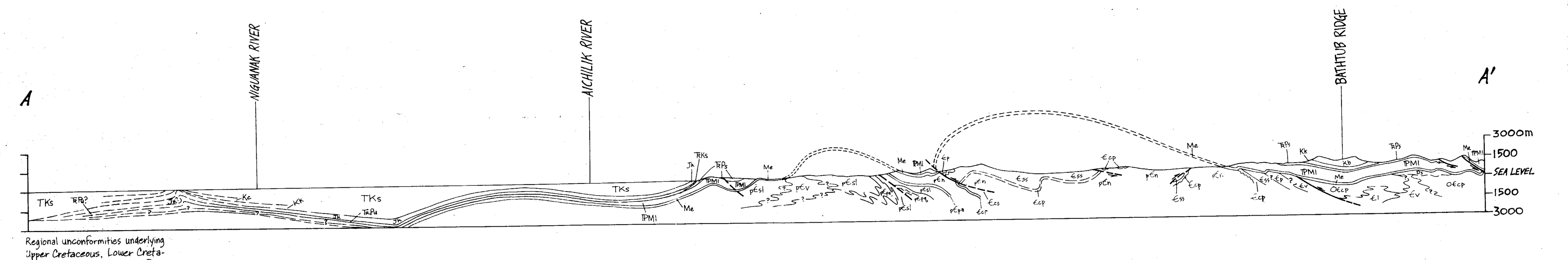


Base from U. S. Geological Survey, 1955
Minor revisions 1974

Scale 1:250 000

CONTOUR INTERVAL 200 FEET
DOTTED LINES REPRESENT 100 FOOT CONTOURS
DATUM IS MEAN SEA LEVEL
DEPTH CURVES IN FEET-DATUM IS MEAN LOWER LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER

Geology by E. de K. Leffingwell, 1907; A. G. Maddren, G. L. Harrington, 1912; M. D. Mangus, 1953; E. G. Sable, G. R. Kunkle, 1957; E. G. Sable, R. S. Bunnell, 1958; W. P. Brosgé, H. N. Reiser, 1960; I. L. Tailleur, A. K. Armstrong, H. N. Reiser, H. A. Tourtelot, 1968; H. N. Reiser, W. P. Brosgé, J. T. Dutro, Jr., R. L. Detterman, E. G. Sable, A. K. Armstrong, 1969-70; H. N. Reiser, W. P. Brosgé, J. T. Dutro, Jr., R. L. Detterman, A. K. Armstrong, 1971; H. N. Reiser, W. P. Brosgé, 1972; H. N. Reiser, O. J. Ferrians, Jr., 1973; H. N. Reiser, W. P. Brosgé, and A. Grantz, 1975



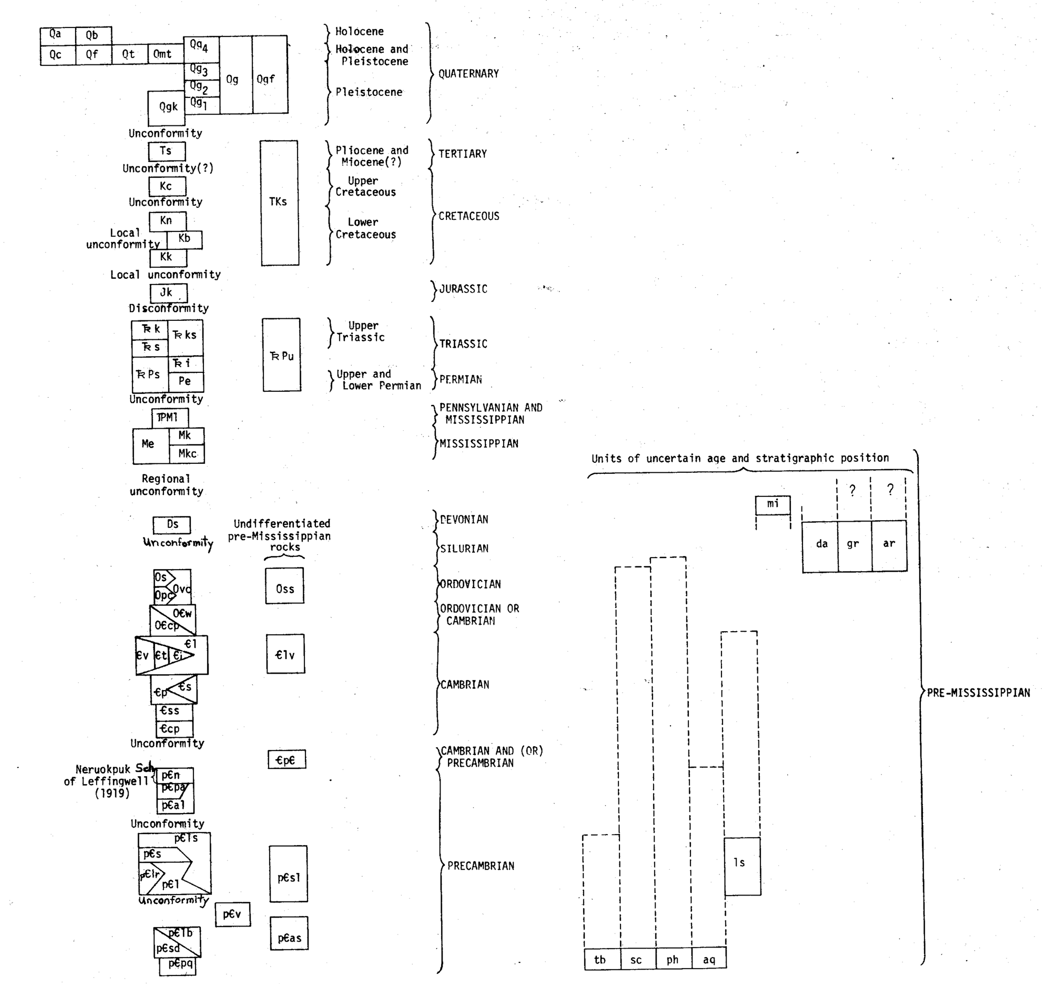
Regional unconformities underlying Upper Cretaceous, Lower Cretaceous, Jurassic, Triassic, Permian, and Mississippian deposits in northeastern Alaska and Canada make subsurface stratigraphic projections uncertain.

GENERALIZED CROSS SECTION

GEOLOGIC MAP OF THE DEMARCATION POINT QUADRANGLE, ALASKA

By H. N. Reiser, W. P. Brosgé, R. L. Detterman, and J. T. Dutro, Jr.
1978

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

Qa ALLUVIUM--Unconsolidated flood-plain deposits of poorly to well sorted silt, sand, pebbles, and cobbles. Restricted to narrow flood plains and low terraces. Locally includes colluvium (unit Qc) in narrow valleys

Qb BEACH DEPOSITS--Modern unconsolidated sand and gravel deposited on shore and in bars paralleling present coastline

Qc COLLUVIUM--Poorly sorted rock debris, sand, silt, and clay resulting from gravity, frost, and sheetflow processes

Qf ALLUVIAL FANS--Poorly sorted silt and gravel deposited by rivers debouching onto coastal plain

Qt TERRACE DEPOSITS--Moderately to well sorted gravel, sand, and silt. Several levels. Locally paired

Qmt MARINE TERRACE DEPOSITS--Unconsolidated gravel, sand, and silt

Qg_4 GLACIAL AND GLACIAL FLUVIAL DEPOSITS--Clay, silt, sand, gravel, and boulders of present or recent mountain glaciations. Includes rock glacier in SE1/4 T. 1 S., R. 36 E.

Qg_3, Qg_2, Qg_1 GLACIAL DEPOSITS--Include moraine and glacial fluvial deposits, clay, silt, sand, pebbles, cobbles, and boulders. Subscripts 1 to 3, respectively, represent deposits of oldest to youngest recognized advances

Qg GLACIAL DEPOSITS--Undifferentiated glacial drift

Qgf GLACIAL FLUVIAL DEPOSITS--Poorly sorted and poorly stratified clay, silt, sand, gravel, and boulders

Qgk GUBIK FORMATION (Pleistocene)--Marine deposits of well to poorly sorted and well to poorly stratified silt, sand, and gravel. Locally includes wood and woody material. Carbon 14 date of greater than 34,000 years from sample at Niguanak River (no. 1, table 1). Thickness more than 10.5 m, probable less than 60 m

Ts UPPER PART OF SAGAVANIRKTOK FORMATION (Miocene? and Pliocene)--Grayish-brown to olive-brown laminated to thin-bedded micaceous poorly indurated claystone, siltstone, and shale. Weathers to grayish-brown adhesive clay. Correlated with Tertiary (Miocene? and Pliocene) sediments (Detterman and others, 1975) west of map area. Thickness more than 300 m

TKs SEDIMENTARY ROCKS--Marine and nonmarine strata of Cretaceous and Tertiary age. Marine strata of interbedded greenish-yellow fine-grained calcareous sandstone, dark-colored siltstone, and shale. Crossbedding and conglomeratic lenses common in sandstone. Nonmarine strata of dark- ...

7/Identified by J. T. Dutro, Jr., and John Pojeta, Jr., U.S. Geol. Survey.
8/Identified by W. B. N. Berry, Univ. of California, Berkeley.
9/Trace fossils identified by J. T. Dutro, Jr., U.S. Geol. Survey.
10/Identified by J. T. Dutro, Jr., and A. R. Palmer, U.S. Geol. Survey.
11/Identified by R. W. Imlay, U.S. Geol. Survey.
12/Identified by W. V. Sliter, U.S. Geol. Survey.

Table 2. Radiogenic Age Determination

Field No.	Location	Mineral	Map unit	K_2O content (percent)	$^{40}Ar_{rad}$ moles/gm)	$^{40}Ar_{rad}/^{40}Ar_{total}$	Apparent age (millions of years)
69ARr131	Lat 69°09' N., long 143°43' W.; sec. 32, T. 3 S., R. 35 E.	Hornblende	gr	0.593 0.594	4.246×10^{-10}	0.87	431±1 *
76ARr8	Lat 69°31'30" N., long 142°21'00" W.	Hornblende	mi	0.868 0.866	6.936×10^{-10}	0.91	484±24

Field No.	69ARr131	76ARr8
Potassium analyses:	Lois Schlocker	G. I. Ambats
Argon analysis and age calculation:	J. C. Von Essen	M. L. Silberman and J. L. Morton
^{40}K decay constants:	$\lambda_e = 0.585 \times 10^{-10}$ year^{-1} $\lambda_\beta = 4.72 \times 10^{-10}$ year^{-1}	$\lambda_e + \lambda'_e = 0.581 \times 10^{-10}$ year^{-1} $\lambda_\beta = 4.962 \times 10^{-10}$ year^{-1}
Abundance ratio:	$^{40}K/K = 1.19 \times 10^{-4}$ atom percent	$^{40}K/K = 1.167 \times 10^{-4}$ atom percent

*Compare apparent ages for lead-alpha 310±35--405±45 m.y.; potassium argon 125-128 m.y. (Sable, 1965; p. 168, 169)

OPEN FILE REPORT
78-526

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature.