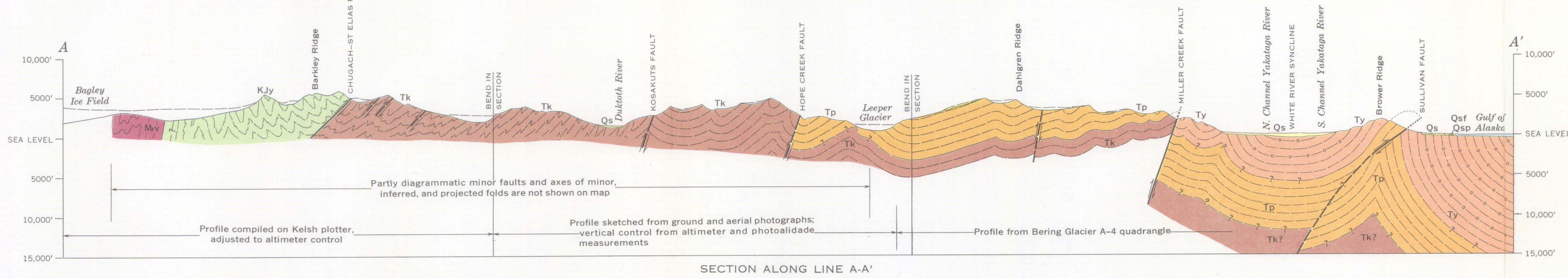
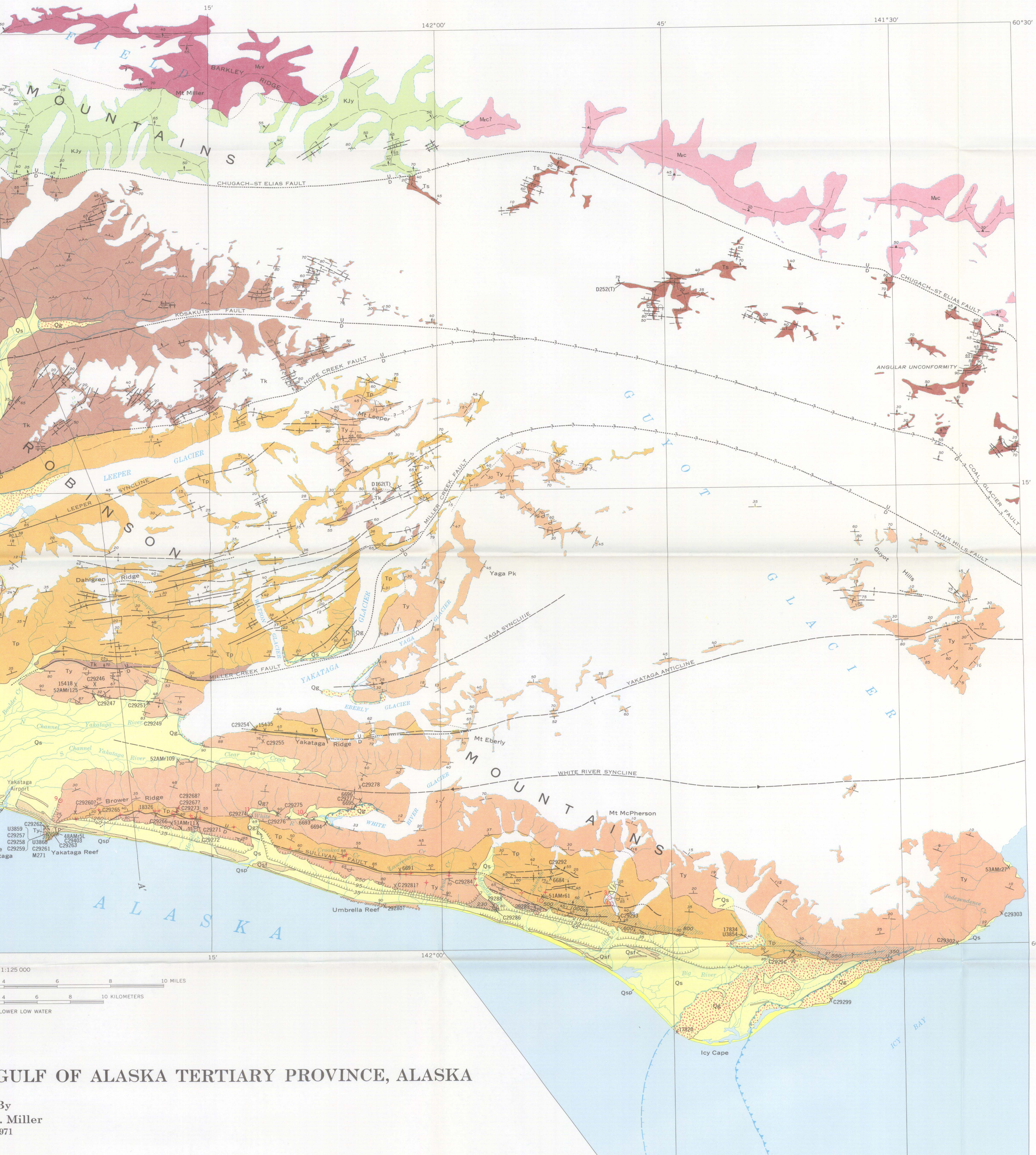
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS GEOLOGIC INVESTIGATIONS
MAP I-610



SECTION ALONG LINE A-A'



SCALE 1:125 000

2 0 2 4 6 8 10 MILES

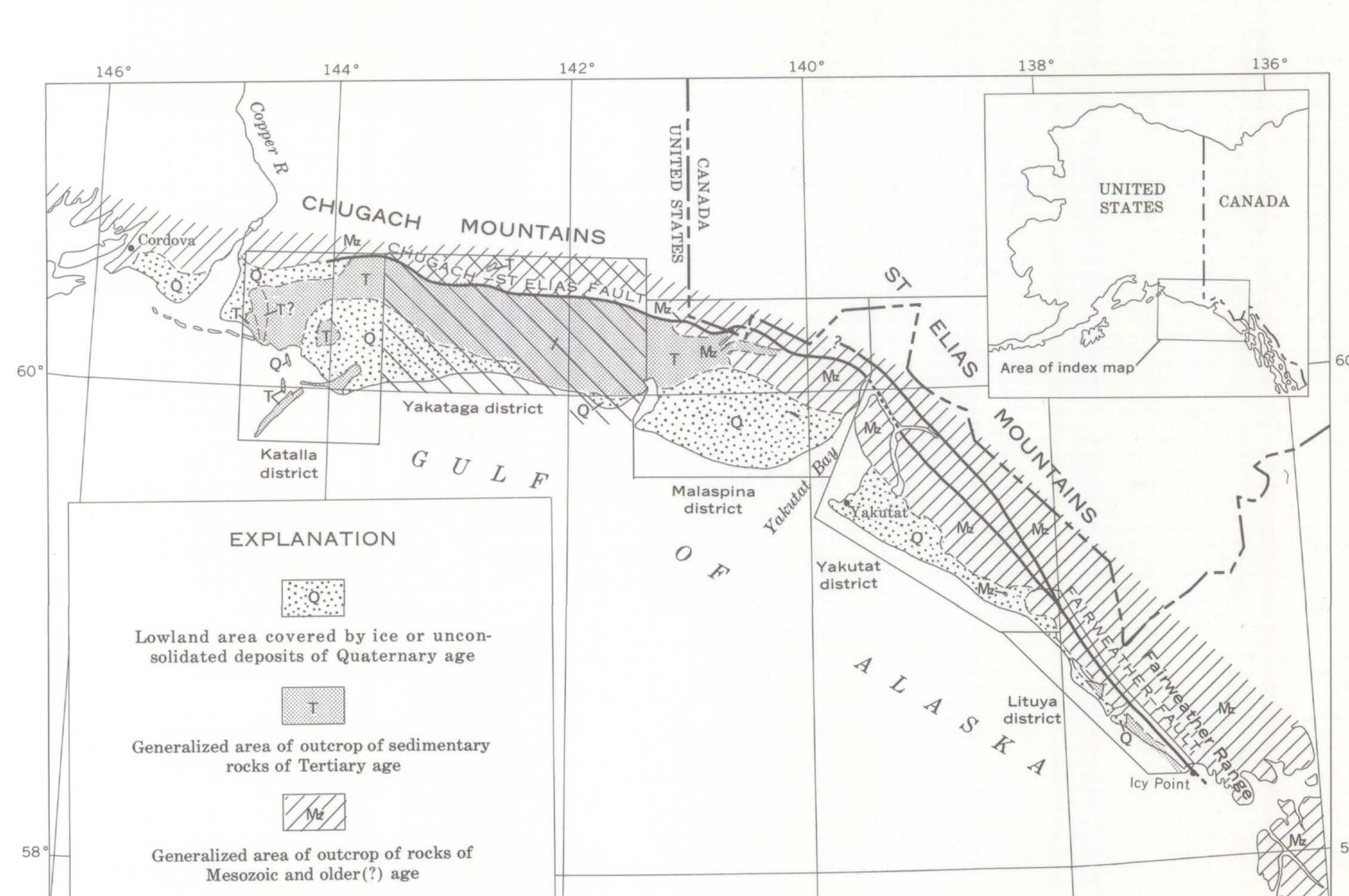
2 0 2 4 6 8 10 KILOMETERS

DATUM IS MEAN LOWER LOW WATER

APPROXIMATE MEAN DECLINATION, 1971

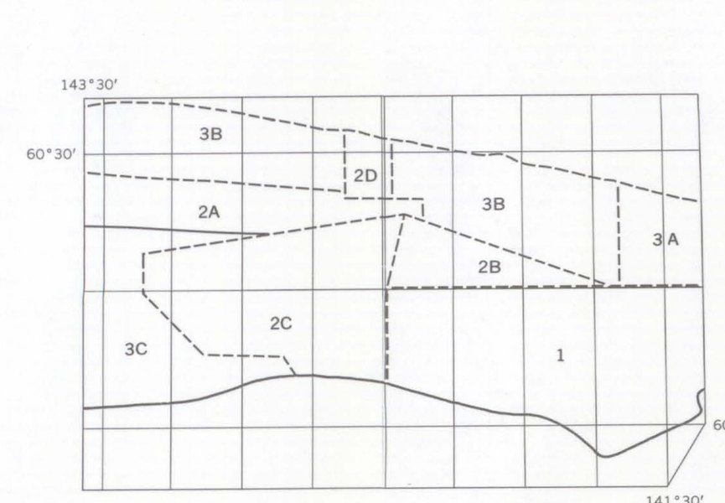
GEOLOGIC MAP OF THE YAKATAGA DISTRICT, GULF OF ALASKA TERTIARY PROVINCE, ALASKA

By
Don J. Miller
1971



INDEX MAP SHOWING LOCATION OF THE YAKATAGA DISTRICT AND OTHER DISTRICTS IN THE GULF OF ALASKA TERTIARY PROVINCE

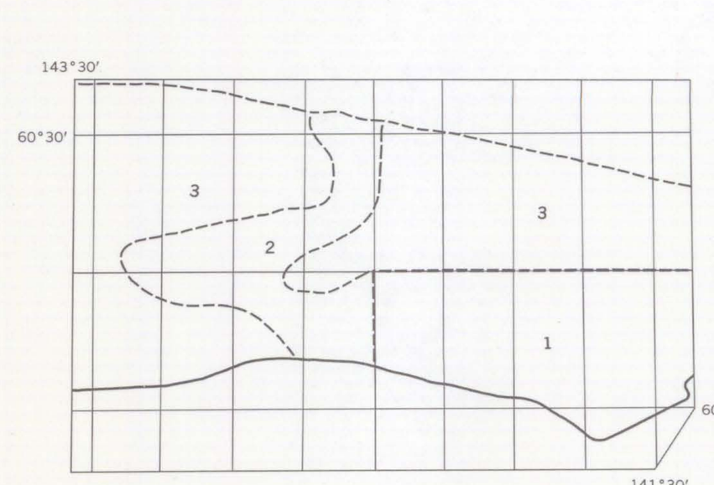
50 0 50 MILES



BASE MAP COMPILATION DIAGRAM

1. U.S. Geological Survey topographic maps of Bering Glacier A-2, A-3, A-4 and Icy Bay D-2 and D-3 (1951) quadrangles. From aerial photographs taken in 1948
2. Planimetry by stereotemplet and stereoplotting methods from aerial photographs taken in 1946 (area 2A), 1948 (area 2B), 1954 (area 2C), and 1957 (area 2D)
3. U.S. Geological Survey topographic map of Bering Glacier (1951) quadrangle, revised by photoalidade and projection methods from oblique aerial photographs taken in 1938 (area 3A) and 1946 (area 3B), and from vertical aerial photographs taken in 1957 (area 3C)

Hydrography from U.S. Coast and Geodetic Survey chart



GEOLOGY COMPILATION DIAGRAM

1. Bedrock geology from field mapping by D. J. Miller and others, 1944–1953; generalized from Miller, U.S. Geological Survey map OM-187, 1957. Landforms and Quaternary unconsolidated deposits from photointerpretation and the field mapping
2. Field mapping by D. J. Miller, R. B. Johnson, George Plafker, and E. E. Brabb, 1946–1953, 1959, supplemented by photointerpretation
3. Photointerpretation, supplemented by field mapping by D. J. Miller in 1946 and 1953

EXPLANATION

UNCONSOLIDATED SEDIMENTARY DEPOSITS

The units listed below overlap in age and therefore are not arranged in stratigraphic order

QUATERNARY — Pleistocene(?) and Holocene

Qs — **Surficial deposits**
Mainly glaciofluvial and fluvial gravel, sand, and mud. Includes lagoon and tidal-estuary deposits at present and former shorelines

Qg — **Glacial moraine deposits**
Undifferentiated deposits of one or more glacial advances; mainly till, but includes lake and glaciofluvial deposits. Arrow indicates direction of ice movement as inferred from trend of elongate ridges and trenches

Qsp, Qsf — **Marine shoreline deposits**
Mainly sand; gravel in places
Qsp, *beach and beach-ridge deposits associated with present shoreline*
Qsf, *beach, beach-ridge and spit deposits associated with former shorelines*

Qes — **Eolian sand**
Deposits with sparse vegetation cover, associated with present shoreline

BEDROCK

UNCONFORMITY

TERTIARY

Miocene and Pliocene — Ty — **Yakataga Formation**
Sandstone and siltstone interbedded with massive conglomeratic sandy mudstone (tillite) in upper part; mainly sandstone and siltstone in lower part; marine

LOCAL UNCONFORMITY

Oligocene and Miocene — Tp — **Poul Creek Formation**
Siltstone with many round to lenticular limestone concretions and sandstone, in part glauconitic; beds of water-laid volcanic breccia and tuff in lower part; marine

UNCONFORMITY(?)

Eocene and Oligocene(?) — Tk — **Kulthieth Formation**
Sandstone, in part arkosic. Interbedded with siltstone and many thin beds of coal; nonmarine and marine. As mapped, unit may locally include basal part of Poul Creek Formation

Ts — **Sedimentary rocks, undifferentiated**
Sandstone and siltstone, locally conglomeratic and coal-bearing; marine and nonmarine

UNCONFORMITY

JURASSIC(?) AND CRETACEOUS

KJy — **Yakutat Group**
Graywacke, argillite, and slate; marine

UNCONFORMITY(?)

MESOZOIC AND OLDER(?)

Mzc — **Crystalline complex**
Undifferentiated metamorphic and intrusive rocks

Mzv — **Volcanic rocks**
Lava with minor pyroclastic deposits; bedding visible in aerial photographs. Includes small bodies of intrusive igneous rocks

Contact
Dashed where approximately located; dotted where concealed; queried where inferred

Fault, showing dip
Dashed where approximately located, dotted where concealed, queried where inferred. U, *upthrown side;* D, *downthrown side*

Anticline

Syncline

Overturned anticline

Overturned syncline

Folds
Showing trace of axial plane and direction of plunge of axis. Dashed where approximately located

Strike and dip of beds

Strike and dip of beds, up side not known

Strike and dip of overturned beds

Strike of vertical beds (90 is on up side, where known)

Average strike and dominant direction of dip of tightly folded beds

Strike and dip of foliation

Attitude of bedding or foliation
Dashed strike bar indicates attitude estimated from ground or aerial photographs or from distant views

Oil seep

Gas seep

C29265
M854

Fossil locality, showing reference number
California Academy of Sciences locality numbers preceded by "C", University of California locality numbers by "U", all others are Geological Survey locality numbers. Query indicates approximate location. Additional fossil localities in area south of lat 60°15' and east of long 142°30' are shown on U.S. Geological Survey Oil and Gas Inv. Map OM-187

Location of well drilled for petroleum
Numbers refer to table 4

GLACIERS AND LANDFORMS

Present margin of glacier or ice field

Maximum stand of glaciers during youngest Holocene advance; coincides with boundary of undifferentiated surficial deposits in places; dashed where approximately located, queried where inferred. Projections are on side toward ice

Maximum stand of glaciers during older Holocene advance; coincides with boundary of undifferentiated surficial deposits in places; dashed where approximately located, queried where inferred. Projections are on side toward ice

Maximum stand of glaciers where definite evidence of only one Holocene advance is recognized; coincides with boundary of undifferentiated surficial deposits in places; dashed where approximately located, queried where inferred. Projections are on side toward ice

Raised sea cliff. Line is at base of cliff and shows position of former marine shoreline, dashed where approximately located; coincides with boundary of bedrock formation or unconsolidated deposits in places. Figure shows approximate altitude of former marine shoreline

Wave-cut bedrock surface overlain by thin or discontinuous unconsolidated deposits. Figure shows approximate altitude

Relatively flat erosion surface on bedrock, overlain by thin or discontinuous unconsolidated deposits; origin uncertain. Figure shows approximate altitude

Landslide

Ridge line

Reef below mean high tide

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For sale by U.S. Geological Survey, price $1.00
Explanatory pamphlet accompanies map