

DESCRIPTION OF MAP UNITS

SURFICIAL DEPOSITS, UNDIFFERENTIATED - Includes alluvial and colluvial materials.

COLLUVIUM - Undifferentiated colluvial deposits. TERRACE DEPOSITS - Undifferentiated terrace alluvium.

Qb BRECCIA - Undifferentiated breccia deposits.

DRIFT - Undifferentiated drift.

SANDSTONE - Medium- to thin-bedded, laminated, friable, moderately sorted, medium- to very fine grained carbonaceous micaceous sandstone; carbonaceous partings between beds and plant remains common. Friable coal beds 0.5-5.0 m thick occur in three places. Megafossil flora suggest late Miocene age for unit.

> uTcg - Poorly exposed, rounded to subrounded pebble-cobble conglomerate with clasts of limestone (95 percent) and sandstone (5 percent) in a coarse-grained calcarenite matrix in lower part of unit.

CONGLOMERATE AND SANDSTONE - Medium- to very thick bedded, lighttan-weathering, poorly sorted, subrounded to rounded granule to pebble quartz conglomerate and poorly sorted, coarse-grained quartz sandstone. Beds are discontinuous, cross-bedded, and contain carbonaceous fragments and partings. Coarse-grained sandstone is interbedded with beds of brown, fine-grained sandstone and siltstone and dark-gray carbonaceous shale 5-20 m thick. In lower part of unit limestone clasts become more abundant. Tentatively assigned a Tertiary age because of lithologic similarity to Tertiary continental deposits in central Alaska Range (Wahrhaftig and others, 1969; Gilbert,

Tcgl - Subrounded, poorly sorted, pebble-cobble-boulder limestone conglomerate derived from underlying Devonian

Ks LITHIC SANDSTONE AND SHALE - Fine- to coarse-grained, laminated lithic sandstone and shale with local pebbly interbeds; contact with Ksq indefinite and gradational. Preliminary identification of Inoceramus scraps by D.L. Jones (USGS) at single locality indicates Turonian age.

Ksq QUARTZOSE SANDSTONE - Thin- to thick-bedded, light-tan, quartzrich siltstone coarsening (?) to laminated, well-sorted, subangular, locally pebbly, coarse-grained quartz sandstone interbedded with dark-gray to black shale. Age assigned to

Cretaceous based on age of Ksl. Kst SILTSTONE AND SANDSTONE - Predominantly very well indurated, laminated, gray siltstone and light-tan, very fine to fine-grained quartz sandstone. Age assignment uncertain because of fault

PALEOZOIC ROCKS NORTHWEST OF FAREWELL FAULT

ARGILLITE AND CHERT - Very well indurated, dark-gray argillite and dark-gray and white banded argillaceous chert.

uPz1 - Silicified limestone containing corals, trilobites, brachiopods, and bryozoa, which suggest late Paleozoic age.

LIMESTONE - Dark-gray bioclastic limestone; abundant brachiopods, gastropods, trilobites, corals, and conodonts indicate Middle Devonian age.

DOLOMITE - Very thick bedded, gray, pink, and cream-colored, finely laminated, very coarse to fine-grained dolomite. Stratigraphic position indicates Early Devonian age.

1D1 - Prominent gray-limestone interbed.

Sd - Dolomitized part of unit.

contact with Ksq.

ALGAL LIMESTONE - Discontinuous but generally thick-bedded buff to white stromatoporoidal limestone with subordinate beds of laminated limestone. Preliminary identification of sparse brachiopod and coral fauna indicates Silurian age.

LAMINATED LIMESTONE - Thin- to thick-bedded, light-gray-weathering, dark-gray, lenticular laminated limestone. Preliminary

identification of brachiopod and conodont fauna suggests Late Ordovician age. LIMESTONE AND ARGILLITE - Thin- to thick-bedded, cherty, laminated

limestone, algal limestone, limestone breccia, and black argil-

toporoidal limestone, and thin- to thick-bedded, orangeweathering siltstone and calcarenite. Age assigned to

Ordovician because of stratigraphic relationship to uOl.

lite. Preliminary identification of abundant brachiopod and conodont fauna indicates Late Ordovician age. ARGILLACEOUS LIMESTONE AND ARGILLITE - Heterogeneous unit of very thin to thin-bedded, cross-bedded, argillaceous limestone, thin-bedded laminated limestone, thin- to thick-bedded stroma-

Olb - Limestone breccia.

This is a preliminary publication of the Alaska Division of Geological and Geophysical Surveys and as

such has not received final editing and review. The author will appreciate candid comments on the accuracy

of the data, and welcome suggestions that will improve

BANDED MUDSTONE - Very thin to thick-bedded, dark-gray lime mudstone with flattened lime-mud concretions and very thin bedded mudstone and lime mud exhibiting sedimentary boudinage structures. Age uncertain, but assigned to Ordovician because of stratigraphic position.

Ola - Algal stromatoporoidal limestone.

OEd OOLITIC DOLOMITE - Very thick bedded, white oolitic-pelletoidal dolomite. Age uncertain.

OEI OOLITIC LIMESTONE - Very thick bedded oolitic-pelletoidal limestone that may overlie thin- to thick-bedded, gray, laminated limestone in slivers along Farewell fault. Age uncertain. MESOZOIC-PALEOZOIC ROCKS SOUTHEAST OF FAREWELL FAULT

PILLOW BASALT - Dark-green pillow basalt interbedded with minor discontinuous beds of dark-brown, gray, and white argillite and chert. Radiolaria identified by D.L. Jones (USGS) suggest Triassic age.

LIMESTONE - Very thick bedded, dark-gray limestone. Preliminary identification of corals, brachiopods, and foraminifera suggests Late Devonian age.

Dis LIMESTONE, SANDSTONE, AND SILTSTONE - Moderately folded, thick-bedded, dark-gray laminated limestone, micaceous sandstone, and siltstone. Stratigraphic position indicates Devonian age.

DSIs LIMESTONE, SANDSTONE, AND SILTSTONE - Lithologies as in Dls, but

may include thin, distal intervals of micaceous sandstone equivalent to Ss located 10 km to northwest. MICACEOUS SANDSTONE - Brown-weathering, gray, medium- to

bedded, dark-gray limestone. Graptolites collected from one locality (in limestone) indicate Silurian age. So BLACK ARGILLITE - Sheared dark-gray to black argillite, chert,

fine-grained, micaceous calc-sandstone and minor very thick

siltstone, and shale; locally thickened and thinned.

Stratigraphic position indicates Silurian age. SOIS LIMESTONE AND SILTSTONE - Predominantly isoclinally folded, very thin bedded, gray- to orange-weathering, cross-bedded

argillaceous limestone; thin-bedded, laminated gray limestone; very thin to thick-bedded buff- to orange-weathering calc-sandstone and calc-siltstone; and subordinate black shale. Age uncertain.

PLUTONIC ROCKS

Tgr GRANITE - Medium- to coarse-grained, equigranular biotite granite; yields K-Ar age of 39.8 + 1.2 m.y. (table 1). Tai DIORITE - Medium-grained, equigranular pyroxene diorite.

Tda ANDESITE DIKES - Porphyritic and equigranular dikes of andesite and basalt. Hornblende andesite in Lyman Hills yields K-Ar age

of 37.1 + 1.1 m.y. (table 1). MaPag ALTERED DIABASE, BRECCIA, AND ANDESITE - Altered diabase, andesite

breccia, and aphanitic to porphyritic andesite. Age uncertain, but appears more altered than Tertiary igneous rocks.

----- Approximately located

---- High-angle fault; dashed where ----- Thrust fault; dashed where approximately located, queried where inferred, dotted where approximately located, queried where inferred

> 25 Bearing and plunge of minor fold axis Major fold axes

_______Anticline _______Overturned anticline STRIKE AND DIP OF BEDS

> Approximate attitude of beds; includes proximate attitude of bedding and subparallel foliation in SOls foliation in SOls

POTASSIUM-ARGON AGE-DATE LOCATION

B=Biotite
H=Hornblende

PRELIMINARY GEOLOGIC MAP OF THE CHEENEETNUK RIVER AREA, ALASKA

CONTOUR INTERVAL 100 FEET DATUM IS MEAN SEA LEVEL

1 0 1

Geology mapped by W.G.Gilbert, 1977-79; assisted by Christopher Nye, 1977; G.M. Laird, 1978-79; and V.M.Ferrell, 1979.

Base from U.S.Geological Survey, Lime Hills D-5, D-6, D-7 (1954) and McGrath A-4, A-5

(1954) quadrangles, Alaska.

ALASKA DIVISION OF GEOLOGICAL &

GEOPHYSICAL SURVEYS