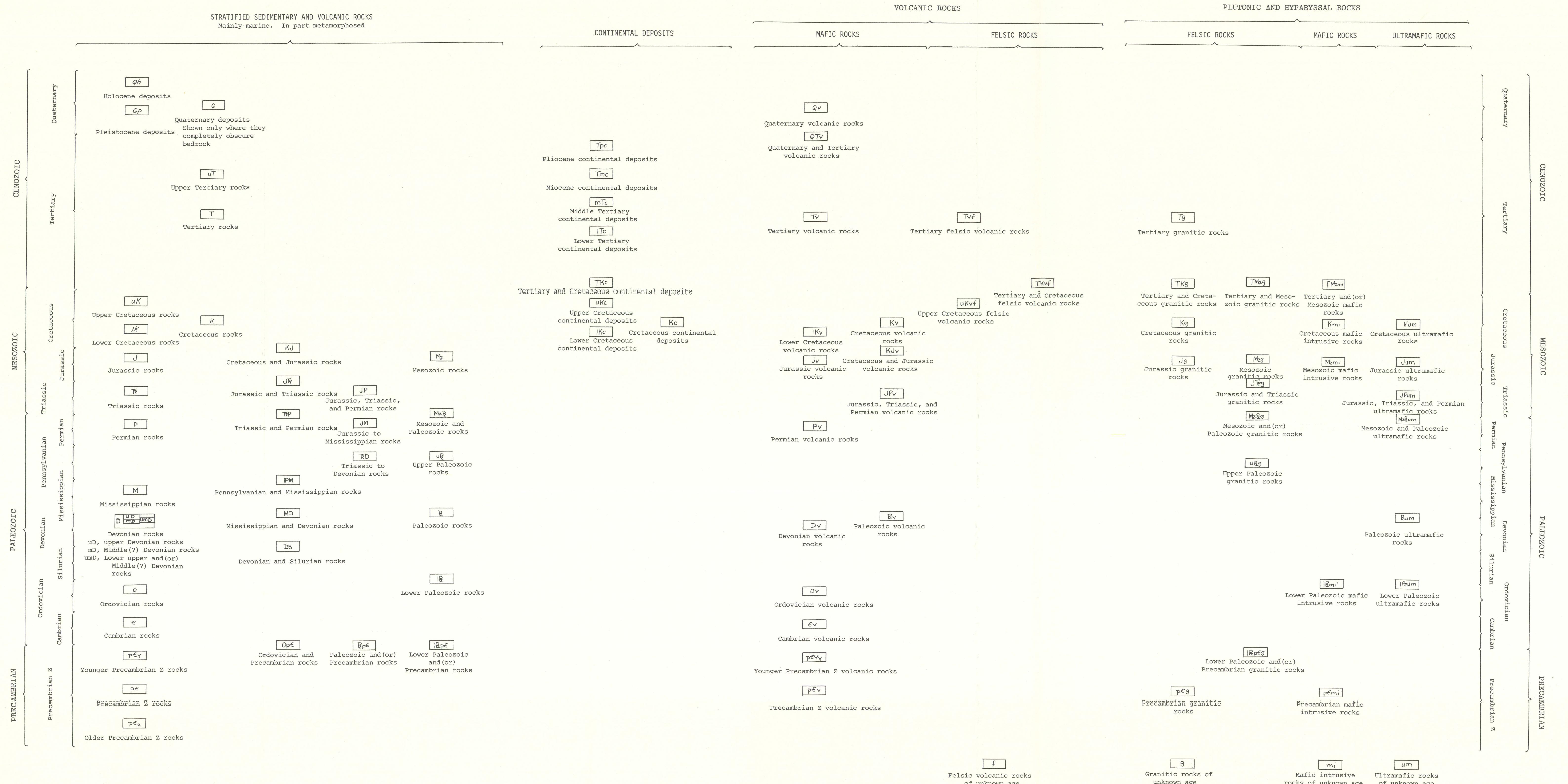


## CORRELATION OF MAP UNITS



## DESCRIPTION OF MAP UNITS

**STRATIFIED SEDIMENTARY AND VOLCANIC ROCKS**  
MAINLY MARINE, IN PART METAMORPHIC

**[D]** HOLOCENE DEPOSITS.--Alluvial, flood plain, beach, low terrace, swamp, and landslide deposits

**[D]** PLEISTOCENE DEPOSITS.--Loess, eolian sand, terrace, flood plain, alluvial, morainal, and outwash deposits

**[D]** UPPER TERTIARY ROCKS.--Nearshore marine deposits of shale, sandstone, conglomerate, mudstone, siltstone, and unconsolidated sand of the upper part of the Saganavirkot Formation

**[T]** TERTIARY ROCKS.--Sedimentary rocks concealed beneath Quaternary cover on Point Hope

**[K]** UPPER CRETACEOUS ROCKS.--Shale, sandstone, conglomerate, bentonite, clay, and coal. Includes the Nimaluk Formation of the Nanushuk Group and the Seabee and Schrader Bluff Formations of the Colville Group

**[K]** CRETACEOUS ROCKS.--Calcareous graywacke, graywacke, mudstone, volcanic graywacke, and volcanic conglomerate

**[K]** LOWER CRETACEOUS ROCKS.--Graywacke sandstone, shale, siltstone, and conglomerate. Includes parts of the Tugluk Formation for former usage, Okpukruak, Fortress Mountain, and Tokor Formations, the Kukpuk Formation in the western Arctic foothills, and the Konguktuk Formation, Shublik Graywacke, Tuktu and Grandstand Formations in the eastern Brooks Range and Arctic foothills

**[K]** CRETACEOUS AND JURASSIC ROCKS.--Graywacke, sandstone, quartzitic sandstone, quartzite, conglomerate, siltstone, shale, and argillite

**[J]** JURASSIC ROCKS.--Shale, siltstone, and claystone of the Kingak Shale along the northern front of the Brooks Range and carbonaceous shale with minor siltstone and quartzite of the Glen Shale in the southeast part of the map area

**[J]** JURASSIC AND TRIASSIC ROCKS.--Chert and argillite

**[T]** TRIASSIC ROCKS.--Shale, chert, and limestone of the Shublik Formation and quartzitic sandstone of the Karen Creek Sandstone

**[P]** TRIASSIC AND PERMIAN ROCKS.--Sandstone, siltstone, and shale of the Saderochit Group

**[P]** JURASSIC, TRIASSIC, AND PERMIAN ROCKS.--Shale, siltstone, and chert in upper part of the Nuka Formation, Siksikpuk Formation (Pemian), Shublik Formation (Triassic), and the unnamed sequences of Pennsylvanian age-- chert, shale, and graywacke sequence and a shale sequence

**[M]** MISSISSIPPAN AND PALEOZOIC ROCKS.--Arkose and glauconitic sandstone, interbedded with shale and chert in the lower part and dolomite, arkose sandstone and conglomerate in the upper part. Comprises a discordant rock sequence of unknown provenance that includes rocks of Mississippian, Triassic, Jurassic, and Cretaceous age. Includes Nuka Formation

**[P]** PERMIAN ROCKS.--Chert, shale, and siltstone of the Siksikpuk Formation and of the Echoka Formation in the eastern Arctic

**[P]** PENNSYLVANIAN AND MISSISSIPPAN ROCKS.--Limestone, conglomerate, shale, dolomite, and chert. Includes Keklikut Conglomerate and Kayak Shale, both of Mississippian age and both in the Endicott Group; and the Alapah and Vahno Limestones of the Lisburne Group, of Mississippian and Pennsylvanian age

**[M]** MISSISSIPPAN ROCKS.--Conglomerate, shale, and limestone with subordinate shale, chert, and dolomite. Includes the Keklikut Conglomerate and Kayak Shale of the Endicott Group, the Utukok Formation and Wachusht and Alapah Limestones of the Lisburne Group, and an unnamed limestone on Cape Prince of Wales

**[J]** JURASSIC TO MISSISSIPPAN ROCKS.--Shale and fossiliferous quartzite of Jurassic and Mississippian (?) age in the east-central part of the map area. Includes the Lisburne Group, Saderochit Group, and Kingak Shale along the northeast front of the Brooks Range

**[D]** TRIASSIC TO DEVONIAN ROCKS.--Radiolarian chert, slate, and argillite of undetermined age and thickness

**[E]** UPPER PALEOZOIC ROCKS.--Argillite, chert, shale, limestone, and siltstone

**[E]** PALEOZOIC ROCKS.--Limestone and schists north of Norton Bay, limestone and marble on Seward Peninsula; and gneiss, schist, and pyrophyte on Yukon-Tanana Upland. May include some Precambrian rocks

**[M]** MISSISSIPPAN (AND) PERMIAN DEVONIAN ROCKS.--Sandstone, quartzite, graywacke, and quartz-chert conglomerate. Includes the Nokat Sandstone in western Brooks Range and undifferentiated Keklikut or Kanayut Conglomerate in eastern Brooks Range

**[D]** DEVONIAN ROCKS.--Phyllite, hornfels, graywacke, and sandstone and shale on the Seward Peninsula

**[D]** UPPER DEVONIAN ROCKS.--Consists of a clastic sequence of shale, sandstone, chert, quartz-pebble conglomerate, quartzite in the eastern and central Brooks Range, and a carbonate sequence of limestone and dolomite in the western Brooks Range. Includes the Hunt Fork Shale and Kanayut Conglomerate, both in the Endicott Group, in the Philip Smith and Endicott Mountains; Hunt Fork Shale in the southern De Long Mountains; and the E11 Limestone in the Baird Mountains

**[D]** LOWER UPPER (AND) (OR) UPPER MIDDLE(?) DEVONIAN ROCKS.--Conglomerate, graywacke, chloritic phyllite, calcareous shale and sandstone, siltstone, and minor limestone

**[D]** MIDDLE(?) DEVONIAN ROCKS.--Limestone and dolomite of the Nanuk Limestone in the Shublik Mountains

**[D]** DEVONIAN AND SILURIAN ROCKS.--Includes the Kataktuk Dolomite in the Saderochit Mountains, limestone, dolomite, marble, and interbedded shale of the Skajit Limestone in the Brooks Range

**[D]** LOWER PALEOZOIC ROCKS.--Phyllite, slate, schist, graywacke, quartzite along north edge of Yukon-Koyuk basin; limestone, chert, shale, sandstone, and mudstone northeast of Manley Hot Springs and along Yukon River at east edge of map area where some rocks of Mississippian age are included; chert and phyllite in northeast part of map area

**[O]** ORDOVICIAN ROCKS.--Limestone, dolomitic limestone, argillaceous limestone, and subordinate shale on the Seward Peninsula

**[O]** ORDOVICIAN, CAMBRIAN, AND PRECAMBRIAN ROCKS.--Phyllite, sandstone, siltstone, limestone, chert, and quartzite in the White Mountain area in the southeast part of the map and limestone, argillaceous limestone, and dolomitic argillaceous limestone of Ordovician and Precambrian age on the Seward Peninsula

**[P]** PALEOZOIC AND (OR) PRECAMBRIAN ROCKS.--Metasedimentary and metagneiss rocks, including schist and gneiss primarily of the greenish and amphibolite facies in the Yukon-Tanana Upland. Formerly included in the Birch Creek Schist

**[C]** CAMBRIAN ROCKS.--Calcareous siltstone and sandstone, phyllite, and sandstone in the northeast Brooks Range

**[P]** LOWER PALEOZOIC (AND) PRECAMBRIAN ROCKS.--Sandstone, limestone, shale, chert, phyllite, argillite, and quartzite of the Nerusuk Formation in the northeast Brooks Range; quartz-mica schist, mafic greenishschist, calcareous schist, chlorite quartz schist, phyllite, and argillite of the Nerusuk Formation in the northeast Brooks Range; phyllite, slate, and siltstone near Salmon in the east-central part of the area; and limestone, dolomite, sandstone, shale, and basalt of the Tindir Group north of the Tinlinna fault

**[P]** YOUNGER PRECAMBRIAN Z ROCKS.--Schistose, argillaceous, dolomitic limestone with local tactite

**[P]** PRECAMBRIAN Z ROCKS.--Siltite, phyllite, graywacke, quartz schist, and graphic schist of slate of the York region on the Seward Peninsula; shale, semi-schist, phyllite, and argillite of the Nerusuk Formation in the northeast Brooks Range; phyllite, slate, and siltstone near Salmon in the east-central part of the area; and limestone, dolomite, sandstone, shale, and basalt of the Tindir Group north of the Tinlinna fault

**[P]** OLDER PRECAMBRIAN Z ROCKS.--Schist, gneiss, and migmatitic and metamorphic rocks on the Seward Peninsula. Includes some rocks equivalent to slate of the York region in the Kigluak and Bendeleben Mountains

**[C]** CONTINENTAL DEPOSITS

**[P]** HOLOCENE DEPOSITS

**[D]** PLEIOCENE CONTINENTAL DEPOSITS.--Pebble to boulder conglomerate and coarse sandstone, with interbedded mudflow deposits, claystone, and local thin lignite beds. Includes Menana Gravel

**[T]** MIOCENE CONTINENTAL DEPOSITS.--Sandstone, siltstone, conglomerate, claystone, and coal beds. Includes Healy Creek Formation (Oligocene and Miocene) in the northern part of the central Alaska Range

**[T]** MIDDLE TERTIARY CONTINENTAL DEPOSITS.--Sandstone, siltstone, claystone, and coal beds. Includes Healy Creek Formation (Oligocene and Miocene) in the northern part of the central Alaska Range

**[T]** LOWER TERTIARY CONTINENTAL DEPOSITS.--Coal-bearing sequence and cyclic bedded clay and silt. Includes lower (Paleocene through Oligocene) part of the Saganavirkot Formation. In the Yukon-Tanana Valley, includes interbedded conglomerate, grit, and sandstone with siltstone, shale, and lignite

**[T]** TERTIARY AND CRETACEOUS CONTINENTAL DEPOSITS.--Sandstone, mudstone, conglomerate, and thin lignitic coal beds

**[V]** TERTIARY VOLCANIC ROCKS.--Light-colored lava, tuff, breccia, volcanic conglomerate, and tuffaceous deposits

**[V]** TERTIARY AND CRETACEOUS FELSIC VOLCANIC ROCKS.--Rhyolite, light-colored porphyritic flows, breccia, conglomerate, and tuff of acidic and intermediate composition

**[V]** UPPER CRETACEOUS FELSIC VOLCANIC ROCKS.--Porphyritic latite, quartz latite and trachyte flows, quartz latite porphyry flows and hydrosilicic intrusive rocks, and crystal lithic tuff

**[V]** FELSIC VOLCANIC ROCKS OF UNKNOWN AGE.--Rhyolite

**[V]** PLUTONIC AND HYDROSTATIC ROCKS

**[V]** FELSIC ROCKS

**[V]** TERTIARY GRANITIC ROCKS.--Granitic rocks of acidic and intermediate composition

**[V]** TERTIARY AND CRETACEOUS GRANITIC ROCKS.--Granite and quartz diorite

**[V]** TERTIARY AND CRETACEOUS MAFIC ROCKS.--Gabbro, diabase, and altered equivalents on the Seward Peninsula

**[V]** LOWER PALEOZOIC MAFIC INTRUSIVE ROCKS.--Gabbro, diabase, and altered equivalents on the Seward Peninsula

**[V]** MAFIC INTRUSIVE ROCKS OF UNKNOWN AGE.--Primarily gabbro and basalt on the Seward Peninsula and includes altered mafic intrusive and extrusive rocks on the south flank of the Brooks Range

**[V]** ULTRAMAFIC ROCKS

**[V]** CRETACEOUS ULTRAMAFIC ROCKS.--Serpentinite

**[V]** JURASSIC ULTRAMAFIC ROCKS.--Serpentinite

**[V]** JURASSIC, TRIASSIC, AND PERMIAN ULTRAMAFIC ROCKS.--Serpentinized peridotite and dunite. In the western Brooks Range consists of locally serpentinized complex of gabbroic and ultramafic rocks

**[V]** MESOZOIC AND PALEOZOIC ULTRAMAFIC ROCKS.--Serpentinized peridotite

**[V]** PALEOZOIC ULTRAMAFIC ROCKS.--Serpentinite, peridotite, dunite, and pyroxene

**[V]** LOWER PALEOZOIC ULTRAMAFIC ROCKS.--Serpentinite with some rodolite

**[V]** ULTRAMAFIC ROCKS OF UNKNOWN AGE.--Serpentinite on Seward Peninsula

## PRELIMINARY GEOLOGIC MAP OF NORTHERN ALASKA

COMPILED BY

HELMEN M. BEIKMAN AND ERNEST H. LATHRAM

1976

