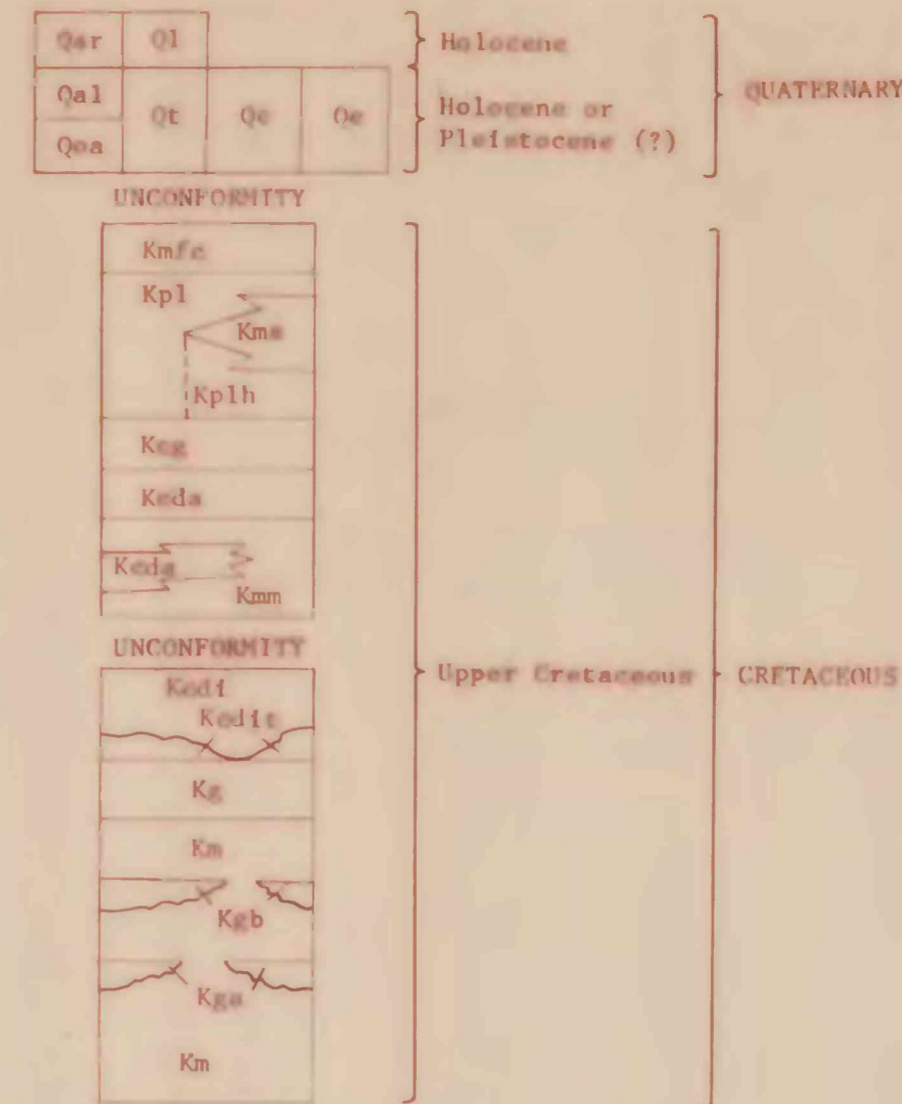


DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY



CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- Qar SAND AND GRAVEL (HOLOCENE)--Deposited in arroyos, as fans and on valley floors since the inception of the most recent cycle of arroyo cutting (c. 1850) (Bryan, 1954)
- Qal SAND AND SILT (HOLOCENE)--Deposited on valley floors as lake beds; during dry periods material is reworked by solon processes
- Qoa UNCONSOLIDATED SAND, SILT, AND GRAVEL (HOLOCENE OR PLEISTOCENE(?))--Light yellow-brown weathering material deposited in graded stream valleys and on flood plains prior to the inception of the most recent cycle of arroyo cutting
- Kmf SAND, SILT, AND GRAVEL (HOLOCENE OR PLEISTOCENE(?))--Light yellow-brown to gray weathering remnants of dissected alluvial fans and pediment surfaces; located topographically above recent (Qar and Qal) alluvial deposits
- Kpl TALUS DEPOSITS (HOLOCENE TO PLEISTOCENE(?))
- Kmg COLLUVIUM (HOLOCENE TO PLEISTOCENE(?))--Combination of talus and slope wash deposits; mapped only in areas representing significant continuous cover of underlying material
- Kms Eolian sand and silt (HOLOCENE TO PLEISTOCENE(?))--Mapped where greater than one metre in thickness and (or) represent areally significant cover of underlying map units; may locally contain some to much reworked residual material
- Kml MENEFEE FORMATION (UPPER CRETACEOUS)
Clearly Coal Member--A variable interbedded sequence of lenticular very fine to medium-grained poorly sorted crossbedded tan to brown sandstone; tan to dark-gray shales, siltstones, and mudstone; thin iron-rich concretiferous beds; and thin coal beds. Thickness as much as 62 m exposed; upper part eroded and section incomplete
- Kmm POINT LOOKOUT SANDSTONE (UPPER CRETACEOUS)
Upper member--Yellowish-gray to buff fine- to very fine grained well-sorted calcareous sandstone; uppermost part of the Point Lookout Sandstone where split by the Satan Tongue of the Mancos Shale but undifferentiated Point Lookout Sandstone where the Satan Tongue is absent. Thickness as much as 95 m exposed; upper part locally eroded and section incomplete
- Kdb Hosta Tongue--Yellowish-gray to buff fine- to very fine grained well-sorted calcareous sandstone; locally fossiliferous at top. Mapped as lower part of Point Lookout Sandstone only where the Satan Tongue of the Mancos Shale splits the Point Lookout Sandstone into upper and lower parts. Thickness 26-43 m
- Kdi MANCOS SHALE (UPPER CRETACEOUS)
Satan Tongue--Interbedded light-gray to tan shale and mudstone and thin beds of tan to buff fine-grained well-sorted calcareous sandstone; thin rapidly and becomes considerably sandier to the southwest where it pinches out between the upper member and the Hosta Tongue of the Point Lookout Sandstone. Thickness 0-13+ (incomplete) m
- Kdb Milette Tongue--Interbedded light-gray to tan shale and mudstone and thin beds of buff to tan fine-grained well-sorted calcareous sandstone. Thickness 31-44 m. Dissected into upper and lower parts in western half of quadrangle with first appearance and westward thickening of the "lower" Dalton Sandstone
- Kga Main body--Light- to dark-gray fissile shale with minor amounts of silty material; some scattered thin discontinuous limestone and calcareous sandstone beds. Thickness as much as 300 m between the Gallup Sandstone and the Two Wells Tongue of the Dakota Sandstone. Lower contact not exposed in this quadrangle

- Kmf CREVASSE CANYON FORMATION (UPPER CRETACEOUS)
Gibson Coal Member--Consists of a variable sequence of interbedded lenticular medium- to very coarse grained poorly sorted sandstone, siltstone, mudstone, shale, and thin coal beds. Thickness 75-123 m
- Kdi Dalton Sandstone Member--Yellowish-gray fine- to very fine grained well-sorted calcareous sandstone. Most commonly occurs as two prominent sandstone ledges; the upper ledge massive and the lower thin bedded. Thickness 16-26 m. In western half of quadrangle, a lithologically similar sandstone makes its first appearance in the middle of the Milette Tongue of the Mancos Shale and thickens rapidly to the west with concurrent thinning of the Milette Tongue. This sandstone body has been informally referred to as the "lower" Dalton Sandstone (Sears and others, 1941; O'Sullivan and others, 1972). Thickness 0-18 m
- Kdi Dilco Coal Member--Consists of a variable sequence of thin interbedded fine- to medium-grained areally continuous sheet sandstone, siltstone, mudstone, variegated shale, and thin coal beds. Thickness 14-52 m
- Kdi Lower sandstone of the Dilco Coal Member at Torrvio Mesa (Molenaar, 1971); note, Molenaar assigns this sandstone to the uppermost Gallup Sandstone--Pink to buff fine- to coarse-grained poorly sorted highly crossbedded sandstone. Thickness 0-32 m
- Kp GALLUP SANDSTONE (UPPER CRETACEOUS)
Main body--Pink to tan fine-grained moderately sorted to well-sorted locally crossbedded calcareous sandstone. Thickness 14-35 m
- Kgb Bed "b" of lower Gallup Sandstone--Pink to tan fine- to medium-grained moderately sorted to well sorted calcareous sandstone. Thickness variable to as much as 4.5 m
- Kga Bed "a" of lower Gallup Sandstone--Pink to tan fine- to medium-grained moderately sorted to well sorted calcareous sandstone. Thickness variable to as much as 3 m; locally pinches out

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EXPLANATION OF MAP SYMBOLS

- CONTACT--bashed where approximately located
- STRIKE AND DIP OF BEDS
- EARTH DAM OR DIKE
- STRIKE AND DIP OF JOINTS
- Inclined
- Vertical
- ANTICLINAL FOLD--Trace of axial plane with direction of plunge
- SYNCLINAL FOLD--Trace of axial plane with direction of plunge

Base from U.S. Geological Survey, 1973

Geologic mapping done in 1975

U.S. Geological Survey
Open File Report
This report is preliminary and has not been
edited or reviewed for conformity with U.S.
Geological Survey standards and nomenclature.

PRELIMINARY GEOLOGIC AND STRUCTURE CONTOUR
MAPS OF THE OAK SPRING QUADRANGLE,
McKINLEY COUNTY, NEW MEXICO

By
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