



CORRELATION OF MAP UNITS

Qa ₁	Qa ₂	Qa ₃	Qoa	Qe	Qf	Qg	Qh	Qi	Qj	Qk	Ql	Qm	Qn	Qo	Qp	Qq	Qr	Qs	Qt	Qu	Qv	Qw	Qx	Qy	Qz
										Holocene										QUATERNARY					
										Pleistocene(?)															
UNCONFORMITY																									
Mesaverde Group																									
Upper Cretaceous																									
CRETACEOUS																									
Lower Cretaceous																									
Upper and lower(?) Cretaceous																									

DESCRIPTION OF MAP UNITS

ALLUVIUM

Qa₁ Upper Holocene—Mostly sand and gravel deposited in arroyo fans, and valley floors since about 1850, the beginning of the latest cycle of arroyo cutting.

Qa₂ Holocene—Light-yellowish-gray unconsolidated but stabilized silt, sand, and gravel of graded valley bottoms and flood plains, deposited prior to the latest cycle of arroyo cutting. Grades uplope into colluvium.

Qa₃ Lower Holocene to Pleistocene(?)—Grayish-orange-pink semi-consolidated silt, sand, and gravel in terraces 3-20 ft (1.3-6.5 m) above the graded valley flood plains; also underlies intermediate piedmont and fan surfaces, and the upper reaches of some stream valleys. Generally underlain by older alluvium (Qoa).

Qoa Pleistocene(?)—Nearly grayish-orange to yellowish-gray poorly to partly consolidated silt, sand, and gravel from dissected piedmont alluvial plains, fans, and pavements; generally more than 20 ft (6.5 m) above the level of modern valley flood plains. May include older eolian sand (Qoe).

EOLIAN SAND—Windblown sand and silt

Qoe Younger (Holocene)—Light-colored, unconsolidated

Qoo Older (Pleistocene?)—Oxidized to a reddish-gray color, semi-consolidated

Qf ALLUVIAL FANS (HOLOCENE AND/OR PLEISTOCENE?)—Poorly sorted and unconsolidated sand, silt, and gravel deposited on valley sides, in tributary valleys, at stream junctions, and on bajadas. Grades laterally into colluvium.

Qg COLLUVIUM (HOLOCENE AND/OR PLEISTOCENE?)—Fan talus and slope-wash deposits

Qh TALUS DEPOSITS (HOLOCENE AND/OR PLEISTOCENE?)

Qj LANDSLIDE DEPOSITS AND SLUMP BLOCKS (HOLOCENE AND/OR PLEISTOCENE?)

POINT LOOKOUT SANDSTONE (UPPER CRETACEOUS)

Ep Indifferentiated, or upper ledge where split by Santa Shale Tongue of the Mancos Shale

Eph Bosta Tongue, lower ledge

CREVASSE CANYON FORMATION (UPPER CRETACEOUS)

Eeg Gibson Coal Member

Eed Gullion Sandstone Member

Eedl Ellen Coal Member

GALLUP SANDSTONE (UPPER CRETACEOUS)

Eg Main body, upper ledge

Egb Bed B

Ega Bed A

MANCOS SHALE (UPPER CRETACEOUS)

Emw Santa Shale Tongue—20-30 ft (6.1-9.1 m) thick in the northeast part of the map area; pinches out to the southwest. Not present on Bosta Butte

Emu Mofatto Shale Tongue

Em Main body—That part stratigraphically between the Two-wells Sandstone Tongue (Eot) of the Dakota Sandstone and the main body (Eg) of the Gallup Sandstone

Emj Juana Lopez Member—Thin sandstone and interbedded dark-gray shale

Emw Whitewater Arroyo Shale Tongue

LOWER PART

Eob Unit B

Eoa Unit A

DAKOTA SANDSTONE (UPPER AND LOWER CRETACEOUS)

Eot Two-wells Sandstone Tongue

Ed Main body

CONTACT—Dashed where approximately located

Fault—Showing dip and amount of displacement in feet where measured. Dashed where approximately located; dotted where concealed. U, upthrown side; D, downthrown side

MONOCLINAL FLEXURES—Showing upper and lower fold lines. Arrows indicate direction of dip; amount of dip shown where measured. Longer arrows indicate flatter dip

ANTICLINAL FOLD—Showing surface trace of axial plane and direction of plunge

SYNCLINAL FOLD—Showing surface trace of axial plane and direction of plunge

STRIKE AND DIP OF BEDS

Inclined

Horizontal

STRIKE AND DIP OF JOINTS

Inclined

Vertical

LANDSLIDE BLOCK

EARTH DAM OR DIKE

Base from U.S. Geological Survey, 1961

Geology by I. F. Robertson, 1972-74

U.S. Geological Survey
OPEN FILE REPORT
This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

GEOLOGY

GEOLOGIC AND STRUCTURE CONTOUR MAPS OF THE HOSTA BUTTE QUADRANGLE, MCKINLEY COUNTY, NEW MEXICO

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