

Surficial Deposits

af

Artificial fill Unconsolidated mine tailings. Not shown on geologic cross section or correlation of map units.

Qa

Alluvium of active washes (Holocene) Pink to pale-brown sand to pebble to cobble gravel occurring in incised active stream channels; unconsolidated to finely cemented by calcium carbonate (case hardened). Clast composition is dominantly limestone and dolomite with subordinate quartzite. Sand-size sediment is primarily quartz; fragmental limestone, dolomite, and feldspar are subordinate. Deposits are typically veneers in wash bottoms and subject to flooding. Thickness ranges from 1 to 5 m.

Qal

Intermittently active alluvium (Holocene) Pink to pale-brown sand and pebble to cobble gravel that occurs primarily on between-channel alluvial flats and less commonly in incised washes; slightly to moderately consolidated. Deposits are lithologically similar to Qa and grade laterally into Qa. Contains limestone transported and deposited during high-water or heavy flood discharges. Thickness ranges from 1 to 5 m.

Qc

Colluvium (age indeterminate) Weathered material transported by gravity. Pink to brown sand, pebble to cobble gravel, and petrocalcic (calcrete) fragments that occur as thin veneers on slopes; unconsolidated to slightly consolidated material recycled from exposed bedrock units and from older alluvial and colluvial deposits; subject to reworking by wind and sheetwash. Thickness ranges from 1 to 10 m.

Qoa1

Older alluvium of the Blue Diamond and Red Rock fans (late and middle Pleistocene) Slightly to well dissected, moderately to well consolidated to locally cemented; petrocalcic carbonate horizon (calcrete)

Qoa2

1.5-2 m thick occurs at or near the surface. Clast composition is mainly limestone and dolomite with subordinate quartzite and sandstone. Surface of the unit is flat and smooth; displays a shallow, braided drainage pattern; has a well developed desert pavement; and is mottled on air photographs. This unit is divided into two terrace levels with slight topographic and surface morphology differences. **Qoa2**; desert pavement contains abundant Aztec Sandstone clasts; **Qoa2**; desert pavement contains few Aztec Sandstone clasts. Thickness ranges from 10 to 50 m. In the western portion of quadrangle may occur as a thin veneer (1-2 m thick) over the older gravel deposits of the Blue Diamond and Red Rock fans (Qog).

Qog1

Older gravel deposits of the Blue Diamond and Red Rock fans (Pleistocene/Pliocene) Consolidated to strongly cemented gravel deposits that represent early-generation alluvial fan development. Clasts consist mainly of limestone and dolomite with subordinate quartzite and sandstone. At the surface, carbonate clasts are strongly etched and broken and possess slight to moderate petrocalcic coatings; the petrocalcic horizon is eroded and petrocalcic fragments comprise varying proportions of the surface clasts. **Qog1**; Light-gray to pink-brown, imbricated clast-supported pebble to cobble gravel capped by a matrix-supported petrocalcic (calcrete) horizon 1-1.5 m thick at or near the surface. Deposits contain A-B soil horizons. Surface of the deposit is flat and smooth; displays an incised, dendritic drainage; and contains a well-developed desert pavement. Surficial unit as mapped represents the top of a fan-member and channel depositional sequence that is estimated at about 200 m thick. **Qog2**; Light-gray to medium-brown, imbricated clast-supported pebble to cobble gravel, capped by a petrocalcic (calcrete) horizon 1.5-2 m thick near or at the surface. Lithology is the same as **Qog1**, but the A-B soil horizons have been removed by erosion. This unit is not present in this quadrangle, but occurs immediately to the north on the Blue Diamond NE Quadrangle. **Qog2**; Light to medium-brown, pebble to boulder gravel, capped by a petrocalcic (calcrete) horizon more than 2 m thick. Surface of the deposit displays ballena topography, parallel drainage, and contains a well-developed desert pavement. The petrocalcic (calcrete) horizons are eroding and petrocalcic fragments form the largest proportion of the surface clasts. Thickness ranges from 20 to 60 m.

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Qog3

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Qog3

Moenkopi Formation (Triassic)

Trmu

Upper part of the Moenkopi Formation Includes Upper Red, Middle Red, and Lower Red Members. Undivided. Upper part is chalk white through cream, ash-gray, tan, pinkish-gray, and light-brown interbedded claystone, dolomite, shale, siltstone, gypsiferous sediment, and thin limestone. Weathers light gray to grayish-white. Up to 82 m thick. Lower part is reddish-brown and brown, well-indurated, rippled-marked, well-bedded siltstone, fine-grained sandstone, mudstone, claystone, with thin beds of gypsum. Weathers light reddish brown. Maximum thickness is 150 m.

Trmv

Virgin Limestone Member Cream, yellow, light brown, ash to medium-gray, interbedded oolitic, stylolitic, cryptomicrobial, stromatolitic, and bioclastic limestone, dolomite, gypsum, siltstone, and fine-grained sandstone. Weathers light gray to yellowish brown. Maximum thickness is 130 m.

Trml

Lower Red Member Red to reddish-brown siltstone, sandstone, limestone, shale, and minor gypsiferous siltstone. Weathers light reddish-brown. Maximum thickness is 52 m.

Trm2

Lower Timpanop Member Dark-gray to reddish-brown pebble to cobble conglomerate. Contains rounded clasts of limestone and chert derived from the Kaibab Formation, as well as red calcareous sandstone clasts. Weathers medium- to reddish-gray. Maximum thickness is 30 m.

Kaibab Formation (Permian)

Phk1

Harrisburg Member Light-gray, tan, cream-colored, dolomitic and cherty dolomite, dolomitic limestone, bedded gypsum, and gypsiferous red beds (shale and claystone) in lowermost part. Weathers light to medium gray. Maximum thickness is 75 m.

Phk2

Fossil Mountain Member Medium-gray, thick, massive, cherty limestone, and cherty dolomitic limestone. Contains brachiopods, bryozoans, corals, and microbial limestone. Weathers light gray. Maximum thickness is 100 m.

Toroweap Formation (Permian)

Pw

Woods Ranch Member Tan, pink, red, and gray interbedded shale, dolomite, limestone, siltstone, shale, and interbedded impure gypsum. Weathers light reddish gray. Maximum thickness is 30 m.

Ptb

Brady Canyon Member of the Toroweap Formation (Permian) Gray, pinkish-gray, and lavender-gray, massive dolomitic limestone and cherty dolomitic limestone. Contains brachiopods and pelecypods. Weathers light to medium gray. Maximum thickness is 90 m.

Pts

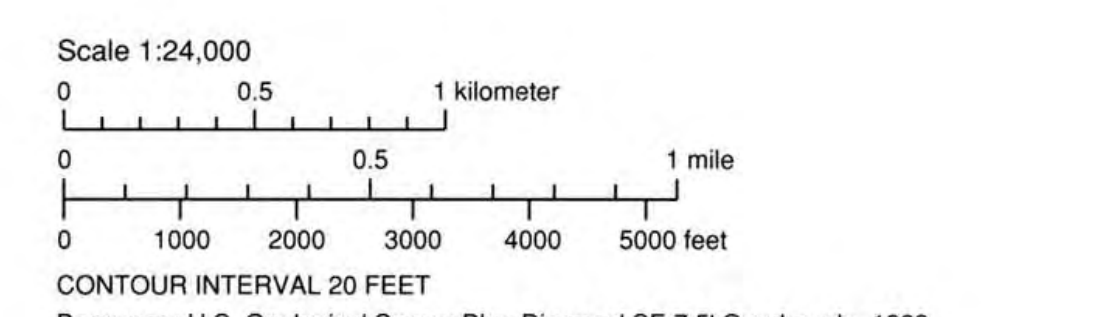
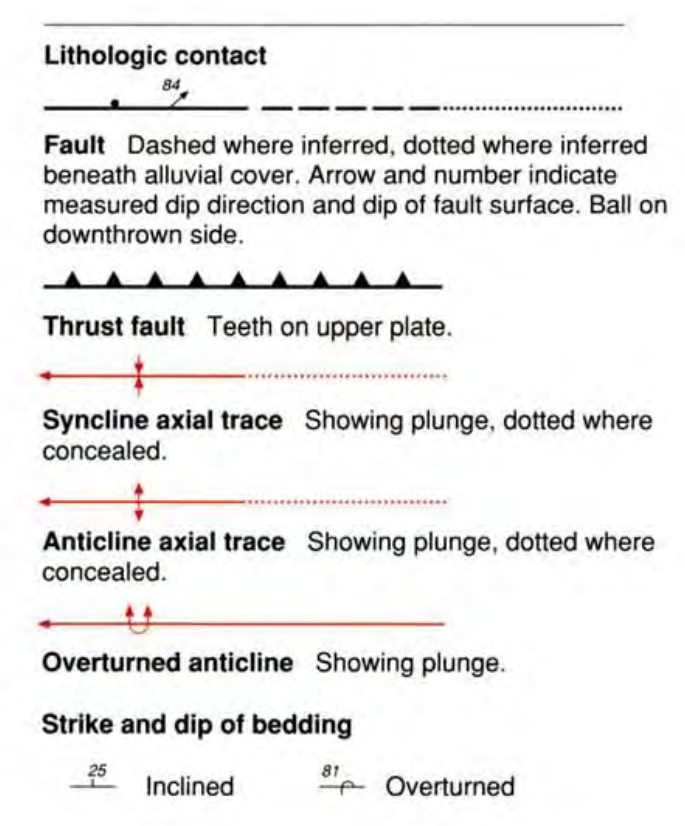
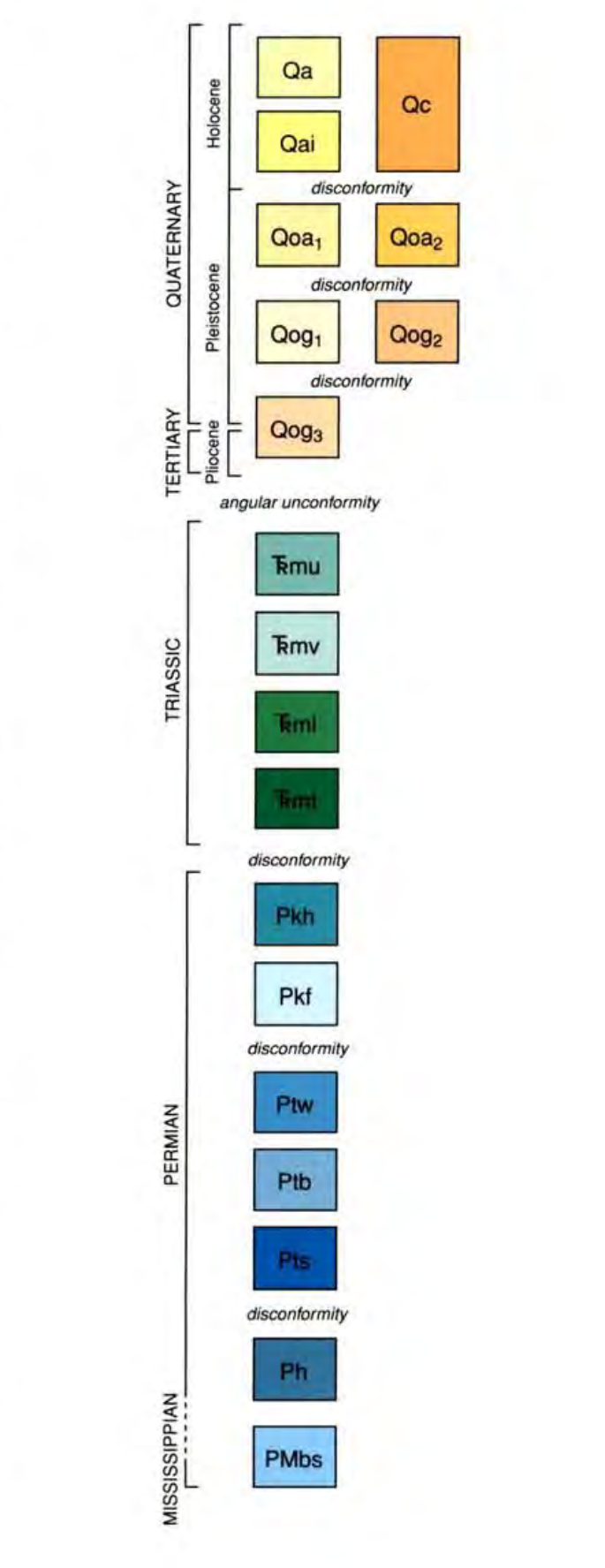
Seligman Member Buff to red interbedded siltstone, very fine-grained sandstone, and gypsum. Some siltstone and sandstone beds are gypsiferous. Dolomite and dolomitic sandstone are present in uppermost part. Weathers light reddish gray. Maximum thickness is 400 m.

Ph

Hermit Formation (Permian) Pinkish-gray, thick-bedded, prominently cross-bedded sandstone interlayered with reddish sandy shale and fine-grained sandstone. Weathers light reddish gray. Maximum thickness is 305 m.

PMDs

Bird Springs Formation (Permian to Mississippian) Light to medium-gray-brown, interbedded siltstone, fusulinid limestone, sandy limestone, and dolomite; also contains sparse intervals of light-brown quartz arenite and shale. Chert nodules and layers of silicified fossils common in some intervals. Well defined beds range from thick to thin. Depicted only on geologic cross section, not exposed in the Blue Diamond SE Quadrangle.



GEOLOGIC MAP OF THE BLUE DIAMOND SE QUADRANGLE, NEVADA
 Michael D. Carr, Cheryl McDonnell-Canan, and David L. Weide
 2000

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