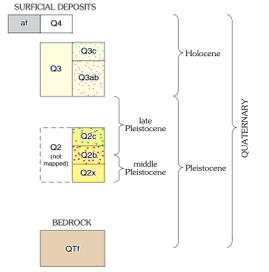


**CORRELATION OF MAP UNITS**



**DESCRIPTION OF UNITS ON GEOLOGIC MAP**

- af** Unit af—Artificial fill (Historic). Man-made deposits associated with roads, construction sites, and other cultural features.
- Q4** Unit Q4—Late Holocene. Young alluvial and debris-flow deposits. Has its original or slightly modified surface morphology (bar and swale topography), no to light desert varnish, no to poorly developed desert pavement, <2-cm thick Av horizon, and lacks zonal soils.
- Q3** Unit Q3—Holocene to latest Pleistocene. Equivalent to unit Q3 of Hunt and Mabey (1965) and Wright and Trovel (1993), which was undifferentiated. Q3 surfaces are characterized by subdued bar and swale topography (typically equal portions), medium to dark desert varnish on moderate to well developed desert pavements that are underlain by medium to thick vesicular A horizons.
- Q3c** Unit Q3c—Late Holocene. Youngest faulted alluvial and debris-flow deposits in area. Has moderately developed pavement with gray to black varnished clasts and moderately thick (2-5 cm) Av horizon.
- Q3ab** Unit Q3ab—Middle? Holocene to latest Pleistocene. Alluvial and debris-flow deposits. Has well developed pavement with black varnished clasts and moderate to thick (5-10 cm) Av horizons. Surfaces formed on older part of unit (subunit Q3a) have weakly developed zonal soils (Bw to weak Bt horizons). Represents combination of units Q3b and Q3a of Klinger and Pietry, 1996.
- Q2** Unit Q2—Late to middle Pleistocene, not mapped in area. Equivalent to unit Q2 of Hunt and Mabey (1965) and Wright and Trovel (1993), which were undifferentiated. Q2 surfaces are characterized by excellent desert pavement (smooth topography), dark desert varnish, and well developed soils containing thick vesicular A horizons and moderate to well developed Bk horizons.
- Q2c** Unit Q2c—Late Pleistocene. Alluvial and debris-flow deposits. Slight vestiges of original bar and swale morphology. Has well developed desert pavement formed by black varnished clasts (but no distinct reddening on undersides).
- Q2b** Unit Q2b—Late? middle Pleistocene. Alluvial and debris-flow deposits. No original bar and swale morphology; surfaces have excellent desert pavement (smooth topography), dark desert varnish with reddened hues on undersides, and well developed soils containing thick (5-10 cm) vesicular A horizons and moderate to well developed Bk horizons (stage Bk3+ morphology; see Machette, 1985).
- Q2x** Unit Q2x—Middle Pleistocene. Remnants of alluvial and lacustrine gravel associated with cut surfaces on older deposits. Mapped from aerial photographs only. Deposits have surficial expression similar to unit Q2b. May comprise a wide range of age of deposits associated with numerous rises and falls of Lake Manly.
- Q1** Unit Q1—Furner Formation (Pliocene to Pleistocene). Sedimentary rocks (sandstone, claystone, sandstone, and conglomerate) of the Furner Formation. Most of the fine-grained sediment is calcareous (i.e., marl). Best exposed on the eastern margin of the Cow Creek Administrative area. Thickness unknown, minimum 100 m.

**EXPLANATION OF GEOLOGIC MAP SYMBOLS**

- Faults**—Dashed where approximately located or inferred, dotted where concealed.
- Contacts between map units**
- Lineaments**—Faint alignments of stream channels or surficial features. The origin of these features was not determined in the field.
- Shorelines**—Ancient shorelines of Lake Manly, located in northeast corner of mapped area. May include features formed during one or more high-stands of the lake. Identified from aerial photographs, not confirmed in field.
- Dip and strike of basin-fill deposits (Q1)**
- Streams**—All streams are intermittent.
- Drainage ditch**—Man-made structure to divert flood waters. Arrows represent direction of water flow.
- Trenches**—Location of exploratory trenches.
- Profiles**—Location of topographic profiles (traverses) used to determine scarp height and surface offset associated with faulting.
- Benchmarks**—Location of local surveying monuments shown on NPS detailed topographic map sheets (1:1,200 scale). Not all benchmarks in mapped area are shown (i.e., CDOT and others).
- Adobe wall**—Location of historic adobe wall surrounding western margin of existing NPS maintenance yard. Shown for purpose of locating other features.
- Fences**—Location of fence surrounding and west of CDOT maintenance yard. Shown for purpose of locating other features.
- Paved roads**
- Other roads (maintained), jeep trails (not maintained), and abandoned roads**
- Gravel or borrow pit**
- Permanent buildings** associated with the Cow Creek Administrative area.

**Surficial Geologic Map of the Cow Creek Facility and Surrounding Area, Death Valley, California**

By  
**Michael N. Machette, Lee-Ann Bradley, and Philadelphia J. Morrow**

1999



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