

117° 22' 30"

117° 15'

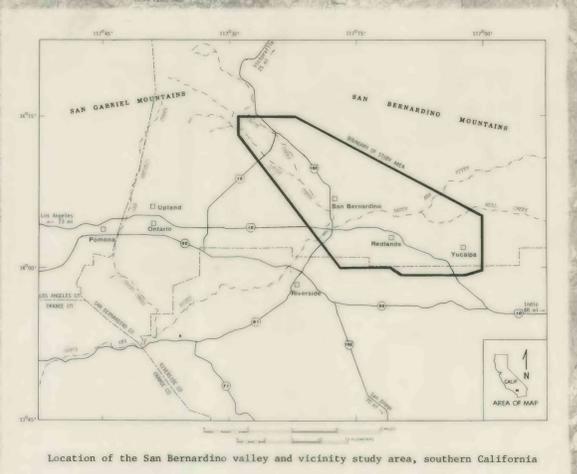
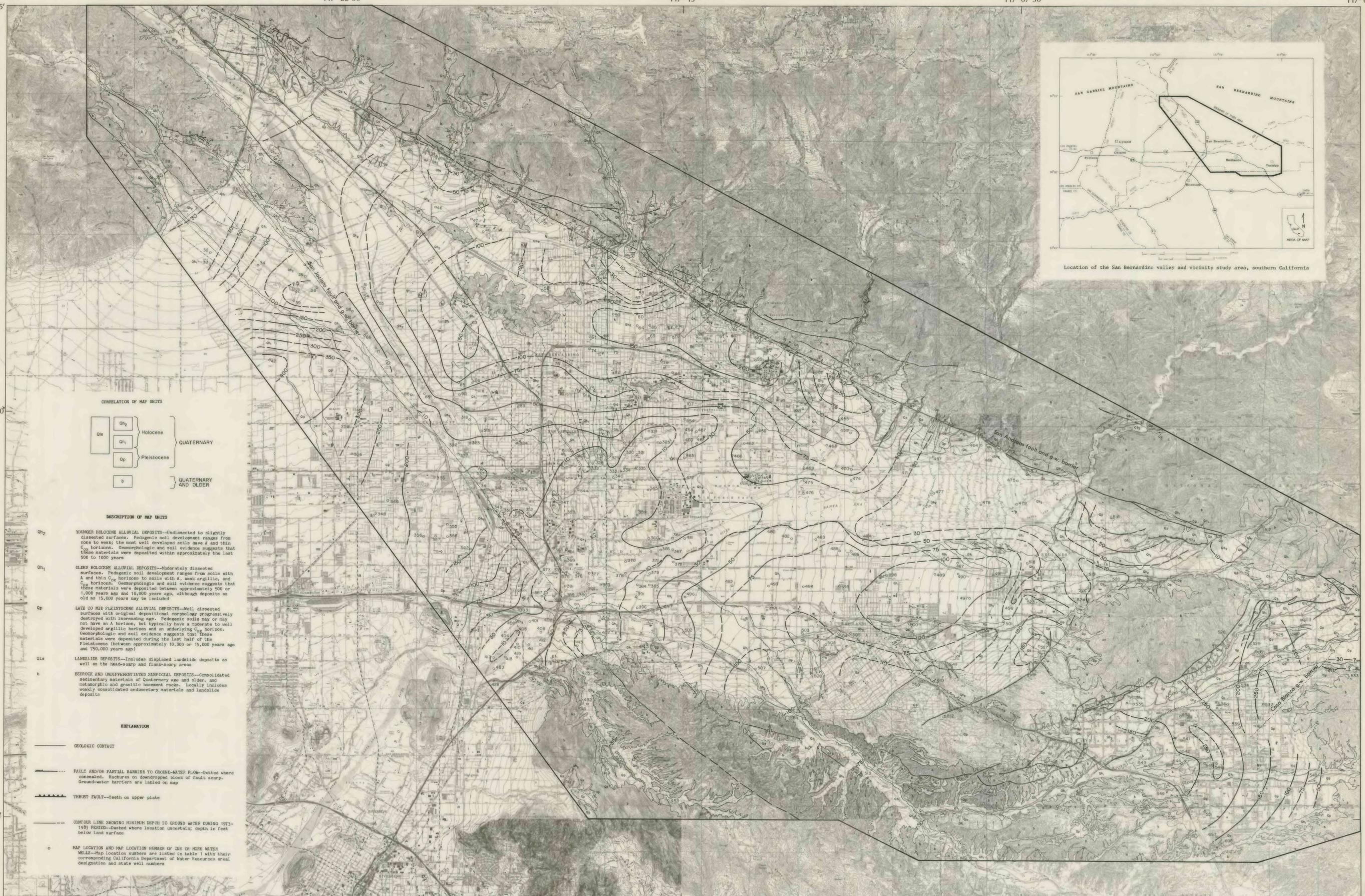
117° 07' 30"

117° 00'

34° 15'

34° 07' 30"

34° 00'



**CORRELATION OF MAP UNITS**

Qh <sub>2</sub>	Holocene	QUATERNARY
Qh <sub>1</sub>		
Qp	Pleistocene	
Qa		
b	QUATERNARY AND OLDER	

**DESCRIPTION OF MAP UNITS**

**Qh<sub>2</sub>** YOUNGER HOLOCENE ALLUVIAL DEPOSITS—Undissected to slightly dissected surfaces. Pedogenic soil development ranges from none to weak; the most well developed soils have A and thin C<sub>h</sub> horizons. Geomorphologic and soil evidence suggests that these materials were deposited within approximately the last 500 to 1000 years.

**Qh<sub>1</sub>** OLDER HOLOCENE ALLUVIAL DEPOSITS—Moderately dissected surfaces. Pedogenic soil development ranges from soils with A and thin C<sub>h</sub> horizons to soils with A, weak argillic, and C<sub>h</sub> horizons. Geomorphologic and soil evidence suggests that these materials were deposited between approximately 500 or 1,000 years ago and 10,000 years ago, although deposits as old as 15,000 years may be included.

**Qp** LATE TO MID PLEISTOCENE ALLUVIAL DEPOSITS—Well dissected surfaces with original depositional morphology progressively destroyed with increasing age. Pedogenic soils may or may not have an A horizon, but typically have a moderate to well developed argillic horizon and an underlying C<sub>h</sub> horizon. Geomorphologic and soil evidence suggests that these materials were deposited during the last half of the Pleistocene (between approximately 10,000 or 15,000 years ago and 750,000 years ago).

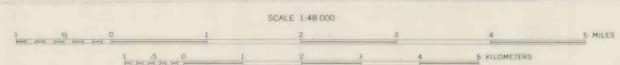
**Qa** LANDSLIDE DEPOSITS—Includes displaced landslide deposits as well as the head-scarp and flank-scarp areas.

**b** BEDROCK AND INDIFFERENTIATED SUSICIAL DEPOSITS—Consolidated sedimentary materials of Quaternary age and older, and metamorphic and granitic basement rocks. Locally includes weakly consolidated sedimentary materials and landslide deposits.

**EXPLANATION**

- GEOLGIC CONTACT
- FAULT AND/OR PARTIAL BARRIER TO GROUND-WATER FLOW—Dotted where concealed. Hashures on down-dropped block of fault scarp. Ground-water barriers are labeled on map.
- ▲▲▲▲ THRUST FAULT—Teeth on upper plate.
- CONTOUR LINE SHOWING MINIMUM DEPTH TO GROUND WATER DURING 1973-1983 FERTICO—dashed where location uncertain; depth in feet below land surface.
- o MAP LOCATION AND MAP LOCATION NUMBER OF ONE OR MORE WATER WELLS—Map location numbers are listed in table 1 with their corresponding California Department of Water Resources areal designation and state well numbers.

Base from U.S. Geological Survey, 1:24,000 Devore, 1966; El Cazo, Redlands, Sunnymead, Keller Peak, 1967; Fontana, Harrison Mtn., Riverside East, Riverside West, San Bernardino North, San Bernardino South, Yucaipa, 1967 (photorevised 1973).



**CONTOUR MAP SHOWING MINIMUM DEPTH TO GROUND WATER,  
SAN BERNARDINO VALLEY AND VICINITY, 1973-1983**

By  
Scott E. Carson and Jonathan C. Matti  
1986

Geology compiled from published and unpublished 1:24,000-scale geologic quadrangle maps as follows: the Devore quadrangle (D.M. Horton and J.C. Matti, unpublished mapping, 1975-1986); the San Bernardino North quadrangle (Miller, 1979; S.E. Carson and J.C. Matti, unpublished mapping, 1980-1986); the Harrison Mtn. quadrangle (S.E. Carson and J.C. Matti, unpublished mapping, 1980-1986); the San Bernardino South quadrangle (Morton, 1978a; J.C. Matti and S.E. Carson, unpublished mapping, 1980-1986); the Redlands quadrangle (Morton, 1978b; J.C. Matti and S.E. Carson, unpublished mapping, 1980-1986); the Yucaipa quadrangle (J.C. Matti, D.M. Horton, B.F. Cox, S.E. Carson, and T.J. Yetter, unpublished mapping, 1975-1986); the Sunnymead quadrangle (Morton, 1978c); and the El Cazo quadrangle (J.C. Matti and D.M. Horton, unpublished mapping, 1975-1986).

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.