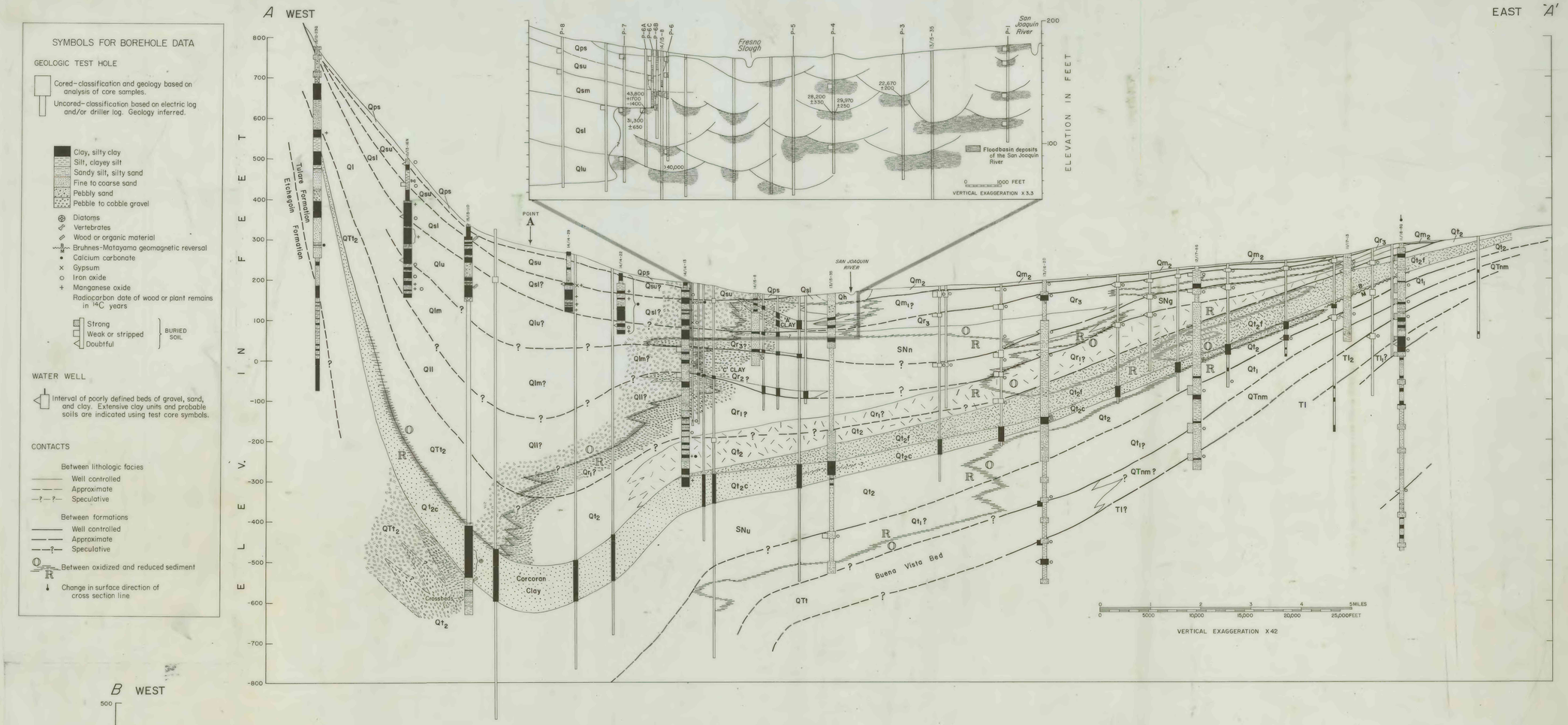

DESCRIPTION OF UNITS (refer to text for detailed descriptions)

LITHOLOGIC (mineralogical analyses by I. E. Klein)

ALLUVIUM OF COAST RANGE PROVENANCE

Contains abundant rock fragments derived from the Franciscan Complex, Freyenhagen Formation, and/or Marlboro Formation. Glaucophane is common in heavy-mineral fine-sand fraction.

ALLUVIUM OF SIERRA NEVADA PROVENANCE

INDIFFERENTIATED Principally micaceous arkosic sand. Commonly contains lithic fragments of Diagenic foothill affinities. Hornblende and volcanic and plutonic clinopyroxene dominant in heavy-mineral fine-sand fraction.

Principally micaceous arkosic sand with subequal alkali and plagioclase feldspar. Rock fragments dominantly granitic. Clinopyroxene chiefly plutonic. Heavy minerals exhibit little weak grain-margin corrosion. Interpreted as glacial outwash alluvium.

Principally arkosic and micaceous arkosic sands with plagioclase dominant over alkali feldspar. Rock fragments both volcanic (principally andesite) and granitic. Clinopyroxene both volcanic and plutonic. Heavy minerals exhibit strong grain-margin corrosion. Interpreted as mixed nonglacial and glacial-outwash alluvium.

PUMICEOUS ALLUVIUM Principally alluvial deposits containing rhyolitic pumice and ash.

.....Greater than 50% pumice and ash

.....5-50% pumice and ash.

LACUSTRINE DEPOSITS.

CLAY, SILTY CLAY AND CLAYEY SILT

Regionally extensive fine-grained deposits of probable lacustrine or paludal origin. Includes "A," "C" and "M" clays of Croft (1972). "C" clay is also known as Corcoran Clay Member of upper unit of the Turlock Lake Formation and the Tulare Formation. Clays locally contain pumice and mica indifferently, in part, a sidereus provenance.

FORMATIONS

Subsurface projections of surface units are based on the location of the Corcoran Clay, superposition of buried soil profiles, and radiometric and paleomagnetic ages.

Description of Formations

Eastern San Joaquin Valley (After Marchand and Allwardt, 1981)

Qh FORT MOHAVE (includes Dos Palos alluvium on valley floodbasin). Alluvium; arkosic clay, silt, sand and gravel. May represent up to four aggradational cycles in Holocene time.

Qm MOHAVE FORMATION Alluvium; arkosic and micaceous arkosic glacial outwash; clay, silt, sand and gravel. Locally divided into:

Qm_2 UPPER UNIT May represent up to four aggradational cycles.

Qm_1 LOWER UNIT May represent two aggradational cycles although latter cycle may be strath surface cut into earlier deposits.

Qr RIVERBANK FORMATION Alluvium; cyclic deposition of arkosic and micaceous arkosic glacial outwash derived mainly from the central Sierra Nevada overlain by mixed arkosic alluvium derived from foothills and central Sierra Nevada; clay, silt, sand and gravel. Extensive lacustrine and paludal deposits occur in axis of valley at base of each cycle. Locally divided into:

Qr_3 UPPER UNIT Probably represents one aggradational cycle.

Qr_2 MIDDLE UNIT Probably represents one aggradational cycle.

Qr_1 LOWER UNIT May represent more than one aggradational cycle.

Qt TURLOCK LAKE FORMATION Alluvium principally undifferentiated micaceous arkosic alluvium derived from foothills and central Sierra Nevada; clay, silt, sand and gravel. Locally divided into

Qt_2 UPPER UNIT Probably represents one aggradational cycle.

Qt_2f FRIANT FORTUN MEMBER Consists of water lain rhyolitic pumice and ash in an arkosic alluvial sand matrix. Potassium-Argon dated as 895,000 years old (Dalrymple, 1980). Conformably overlies Corcoran Clay.

Qt_2c CORCORAN CLAY MEMBER (M-CLAY, BEATTYSCOUTS CLAY) Strongly reduced silty clay and clay of lacustrine and paludal origin. Becomes weakly oxidized and silter near valley margin.

Qt_1 LOWER UNIT Probably represents one aggradational cycle.

QTnm NORTH MERCED GRAVEL Alluvium; undifferentiated arkosic alluvium derived from foothills and interior of Sierra Nevada. Clay, silt, sand and gravel. Deposit merges with extensive surface of erosion at valley margin.

Tl LAGUNA FORMATION Alluvium; undifferentiated arkosic alluvium derived from foothills and interior of Sierra Nevada. Locally contains beds of andesitic detritus near its base (reworked?) from Mineral Moderna Formation.

Tm MEMBER FORMATION Alluvium; principally fluvial deposits of andesitic detritus derived from the Sierra Nevada.

Tvs VALLES GRANDES FORMATION Alluvium; principally rhyolitic tuffaceous sandstone, siltstone and claystone.

Tum UNDIFFERENTIATED MIOCENE ALLUVIUM principally sand, silt and clay of mixed Sierran and Coast Range Provenance.

Western San Joaquin Valley

Qsu PATTERSON ALLUVIUM Alluvium; principally lithoarenitic clay, silt, and sand and gravel of Coast Range Provenance.

Qs SAN LUIS RANCH ALLUVIUM Alluvium; lithoarenitic silt, sand, and gravel of Coast Range Provenance. Locally divided into:

Qs_3 UPPER UNIT

Qs_2 MIDDLE UNIT

Qs_1 LOWER UNIT

Ql LOS BANOS ALLUVIUM Alluvium lithoarenitic silt, sand, and gravel of Coast Range Provenance. Extensive lacustrine and paludal deposits occur in axis of valley associated with base of each member. Locally divided into:

Ql_3 UPPER UNIT

Ql_2 MIDDLE UNIT

Ql_1 LOWER UNIT

QT_1 TIBURON FORMATION Alluvium; moderately consolidated lithoarenitic alluvium of Coast Range Provenance; clay, silt, sand, and gravel. Locally divided into:

QT_{1_2} UPPER UNIT

$QT_{1_{2c}}$ CORCORAN CLAY MEMBER of upper unit. See description above under "Turlock Lake Formation."

QT_{1_1} LOWER UNIT

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