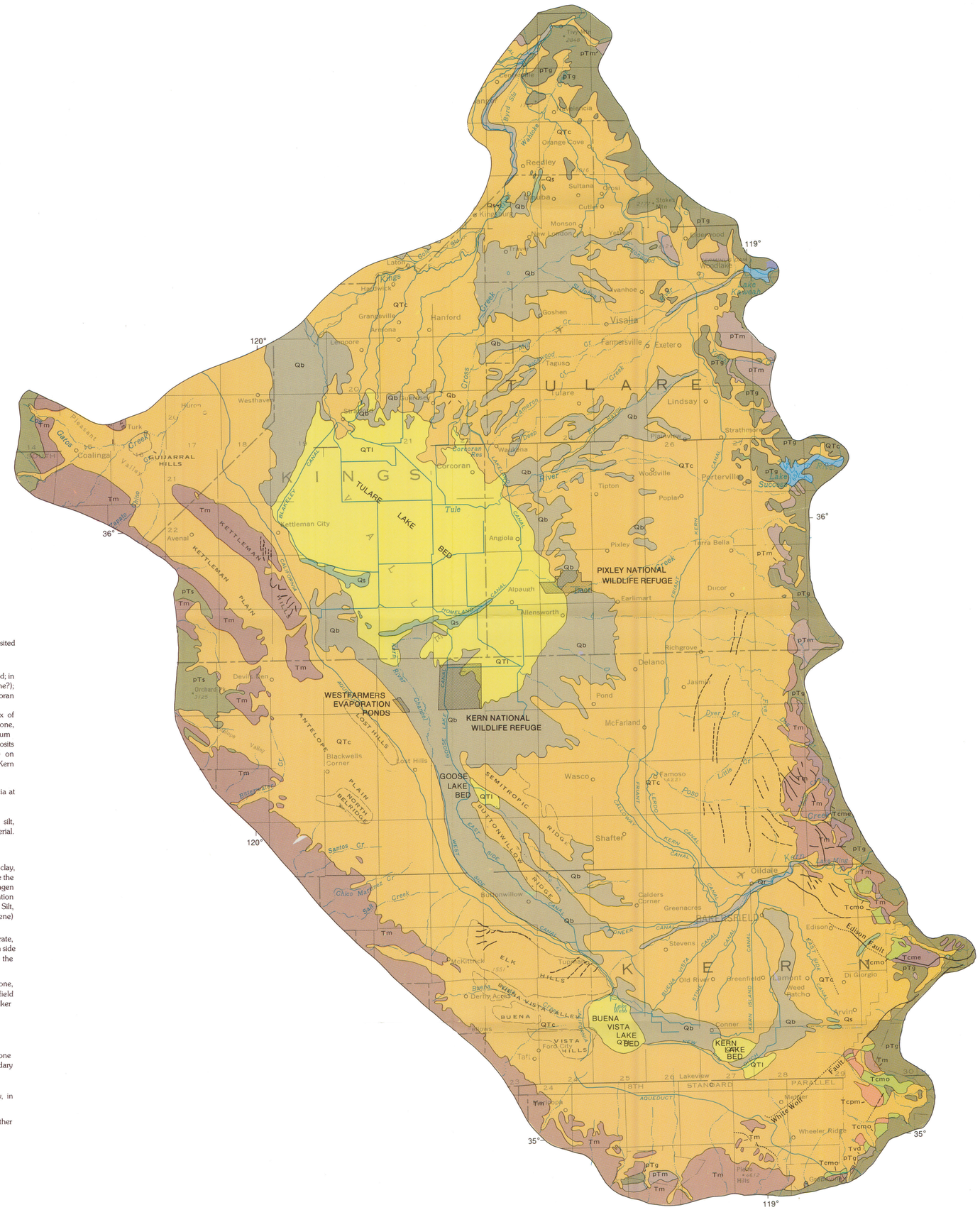

EXPLANATION

CORRELATION OF MAP UNITS

Qs, Qb, Qr	Holocene	QUATERNARY
QTl	Holocene to Pliocene	QUATERNARY AND TERTIARY
QTc	Holocene to Miocene	
Tvd	Pliocene and Miocene	TERTIARY
Tcpm	Pliocene, Miocene, Oligocene, and Eocene	
Tm	Miocene and Oligocene	
Tcmo	Miocene to Eocene	
Tcme	Unconformity	
pTs, pTg, pTm		PRE-TERTIARY

Contact Approximately located

Fault Dashed where approximately located, dotted where concealed

SCALE 1:500,000
0 10 20 MILES
0 10 20 KILOMETERS

DESCRIPTION OF MAP UNITS

Qs **Sand dunes (Holocene)** Windblown sand and dune sand

Qb **Flood-basin deposits (Holocene)** Clay, silt, and some sand

Qr **River deposits (Holocene)** Gravel, sand, silt, and minor amounts of clay, deposited along channels, flood plains, and natural levees of main streams

QTl **Lacustrine and marsh deposits (Holocene to Pliocene)** Clay, silt, and some sand; in subsurface include three widespread clays: A clay (Pleistocene and Holocene?); C clay (Pleistocene); and modified E clay (Pleistocene), includes Corcoran Clay Member of Tulare Formation

QTc **Continental rocks and deposits (Holocene to Miocene)** Heterogeneous mix of generally poorly sorted clay, silt, sand, and gravel; some beds of claystone, siltstone, sandstone, and conglomerate. Include some informal units: younger alluvium (Holocene), older alluvium (Holocene? and Pleistocene), and continental deposits (Pleistocene and Pliocene). Tulare Formation (Pleistocene and Pliocene) on western side of valley, Laguna Formation (Pliocene) on eastern side, and Kern River Formation (Pleistocene? to Miocene) on southeastern part

Tvd **Volcanic rocks and deposits (Pliocene and Miocene)** Tuff and volcanic breccia at south end of valley

Tcpm **Continental rocks and deposits (Pliocene and Miocene)** Gravel, sand, silt, clay, conglomerate, sandstone, siltstone, and claystone, contain andesitic material. Chanac Formation (Miocene) at southern end of valley

Tm **Marine rocks and deposits (Pliocene, Miocene, Oligocene, and Eocene)** Sand, clay, silt, sandstone, shale, mudstone, and siltstone. On western side of valley include the Temblor Formation (Pliocene, Miocene, and Oligocene) and Kreyenhagen Formation (Eocene). On southeastern side include the Santa Margarita Formation of various authors, the Round Mountain Silt, the Olcese Sand, the Freeman Silt, and the Jewett Sand (including the Pyramid Hill Sand Member) (all Miocene) and the Vedder Sand (Oligocene)

Tcmo **Continental rocks and deposits (Miocene and Oligocene)** Gravel, conglomerate, sand, tuffaceous sand, clay, and sandy clay; contain rhyolitic material on eastern side of valley. Unnamed fanglomerates (Miocene) and Bena Gravel (Miocene) in the southern part

Tcme **Continental rocks and deposits (Miocene to Eocene)** Conglomerate, sandstone, consolidated fanglomerate, claystone, tuff and tuff breccia. Near Bakersfield include the Bealville Fanglomerate (Miocene and Oligocene) and the Walker Formation (Miocene to Eocene)

Unconformity

pTs **Marine rocks (Pre-Tertiary)** Sandstone, shale, siltstone, and some limestone on western side of valley; in places contain abundant secondary gypsum. Includes Panoche Formation (Cretaceous)

pTg **Granitic rocks (Pre-Tertiary)** Chiefly granitic rocks on eastern side of valley, in places consists of mafic intrusive rocks

pTm **Metamorphic rocks (Pre-Tertiary)** Metasedimentary, metavolcanic, and other metamorphic rocks on eastern side of valley

Base from U.S. Geological Survey, California State base, 1968

Geology modified by R.W. Page, 1986, from California Division of Mines and Geology, 1959 a,b, 1965, 1966 a,b, and 1969

GEOLOGIC MAP OF THE TULARE BASIN (SOUTHERN SAN JOAQUIN VALLEY), CALIFORNIA