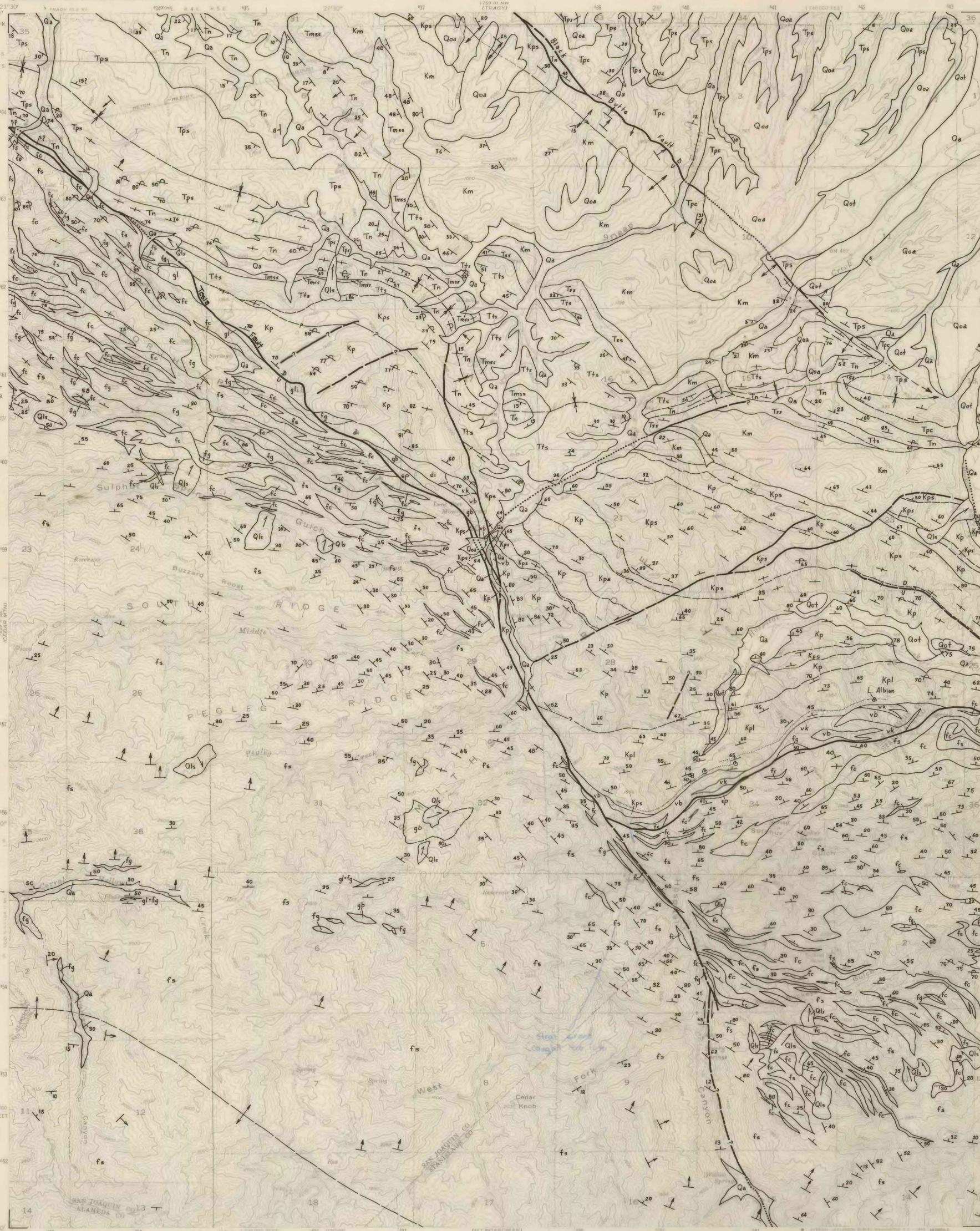


DEPARTMENT OF THE INTERIOR  
UNITED STATES GEOLOGICAL SURVEY

- QUATERNARY**
- Qa Qls: Surficial deposits
  - Qa; alluvium
  - Qls; landslide debris
  - Unconformity
  - Qot Qoa: Older alluvium
  - Qot; younger terrace gravel
  - Qoa; older alluvium, dissected, locally deformed
  - Unconformity
  - Tps Tpc: Nonmarine sedimentary rocks
  - Tps; pebble conglomerate, sandstone, and greenish clay; (mostly clay in northwest part of quadrangle)
  - Tpc; clay, with minor amounts of conglomerate and sandstone
- PLIOCENE**
- Tn: Neroly Formation
  - Brackish marine and nonmarine, pebbly blue sandstone
  - Tmss: Nonmarine (?) sedimentary rocks
  - Pebble conglomerate, sandstone and gray clay
- MIOCENE**
- Tts Tss: Tesla Formation
  - Tts; shallow-marine, fine-grained sandstone and siltstone
  - Tss; medium-grained sandstone, minor clay shale
- Eocene**
- Km: Moreno Shale
  - Marine clay shale
- UPPER CRETACEOUS**
- Kps Kp Kpl: Panoche Formation
  - Kps; marine sandstone, minor clay shale
  - Kp; marine clay shale, minor sandstone
  - Kpl; marine clay shale, minor sandstone
- CRETACEOUS**
- vb vk di gb sp: Ophiolite complex (Extrusive and intrusive rocks)
  - vb; basalt and basalt breccia
  - vk; keratophyre
  - di; diorite-diorite
  - gb; gabbro-peridotite
  - sp; serpentinite, severely sheared
- JURASSIC AND/OR CRETACEOUS**
- fs fc fg gl: Franciscan assemblage
  - (Pervasively sheared, slightly metamorphosed marine sedimentary sequence)
  - fs; sandstone (graywacke), and interbedded micaceous shale
  - fc; varicolored chert
  - fg; greenstone
  - gl; glaucophane blueschist



- Contact  
dashed where gradational or approximately located
- ⇌ U D ?  
Fault  
dashed where inferred; dotted where concealed; queried where existence doubtful; double arrows indicate strike-slip movement; U - upthrown side; D - downthrown side
- ↕  
anticycle
- ↕  
syncline
- ↗  
Axis of fold  
arrow on axis indicates direction of plunge
- ↗ 30° inclined
  - ↗ (approximate) inclined (approximate)
  - ↕ vertical
  - ↗ 70° overturned
- Strike and dip of strata
- ⊙ Fossil (ammonite) locality
  - ⊙ Microfossil locality

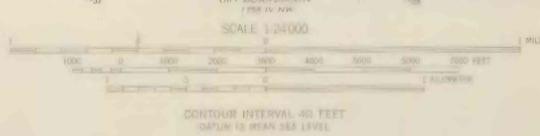
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Geology mapped and compiled by T.W. Dibblee, Jr. (1975), in part modified from H. Sonneman and J. Switzer (unpublished data); P.D. Trask and W.G. Pierce, (1950) and L. A. Raymond (1969, 1973).



PRELIMINARY GEOLOGIC MAP OF THE LONE TREE CREEK QUADRANGLE, SAN JOAQUIN AND STANISLAUS COUNTIES, CALIFORNIA

by  
Thomas W. Dibblee, Jr.  
1981

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