

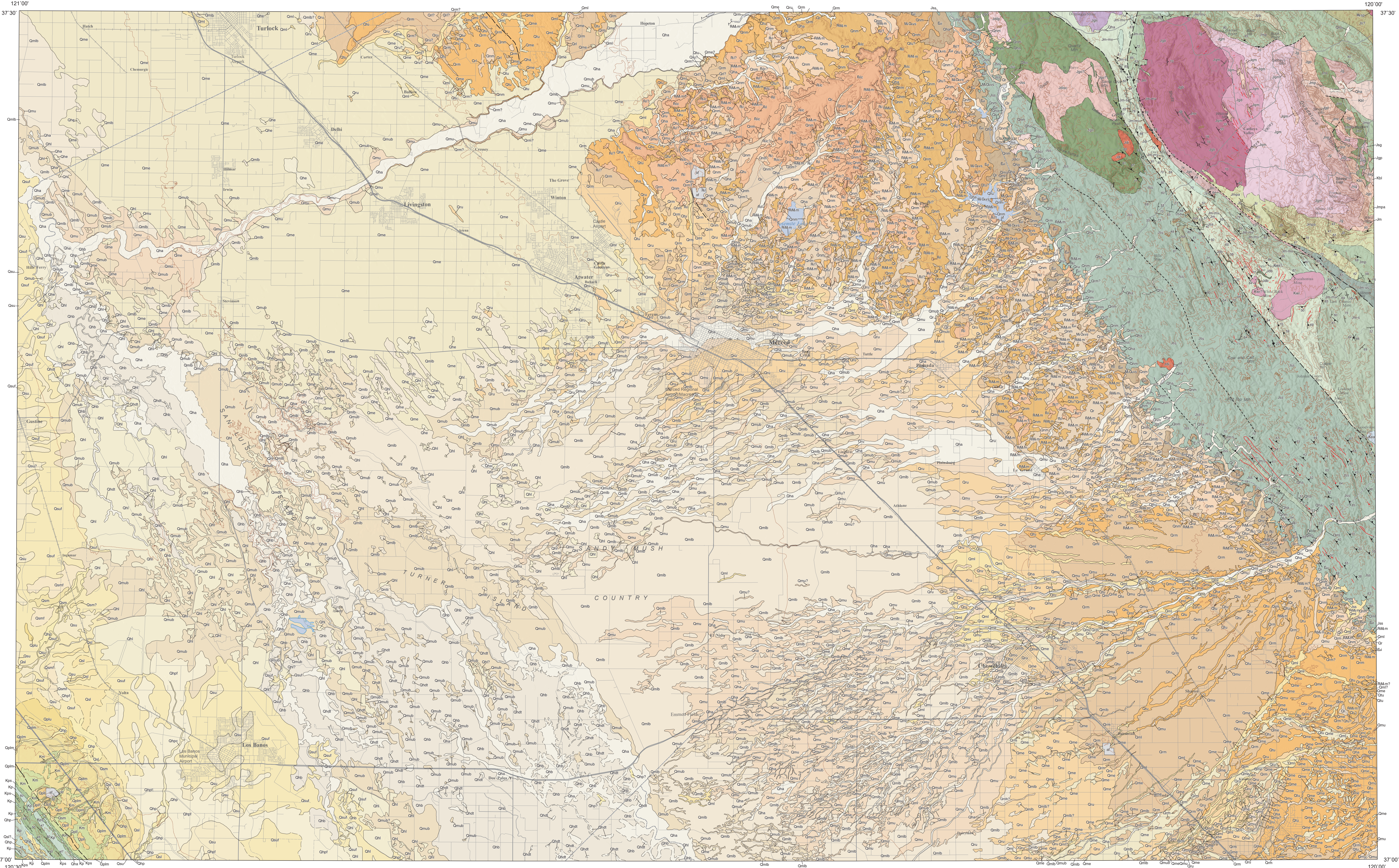


# PRELIMINARY GEOLOGIC MAP OF THE MERCED 30' x 60' QUADRANGLE, CALIFORNIA

VERSION 1.0

By  
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2022



## LIST OF MAP UNITS

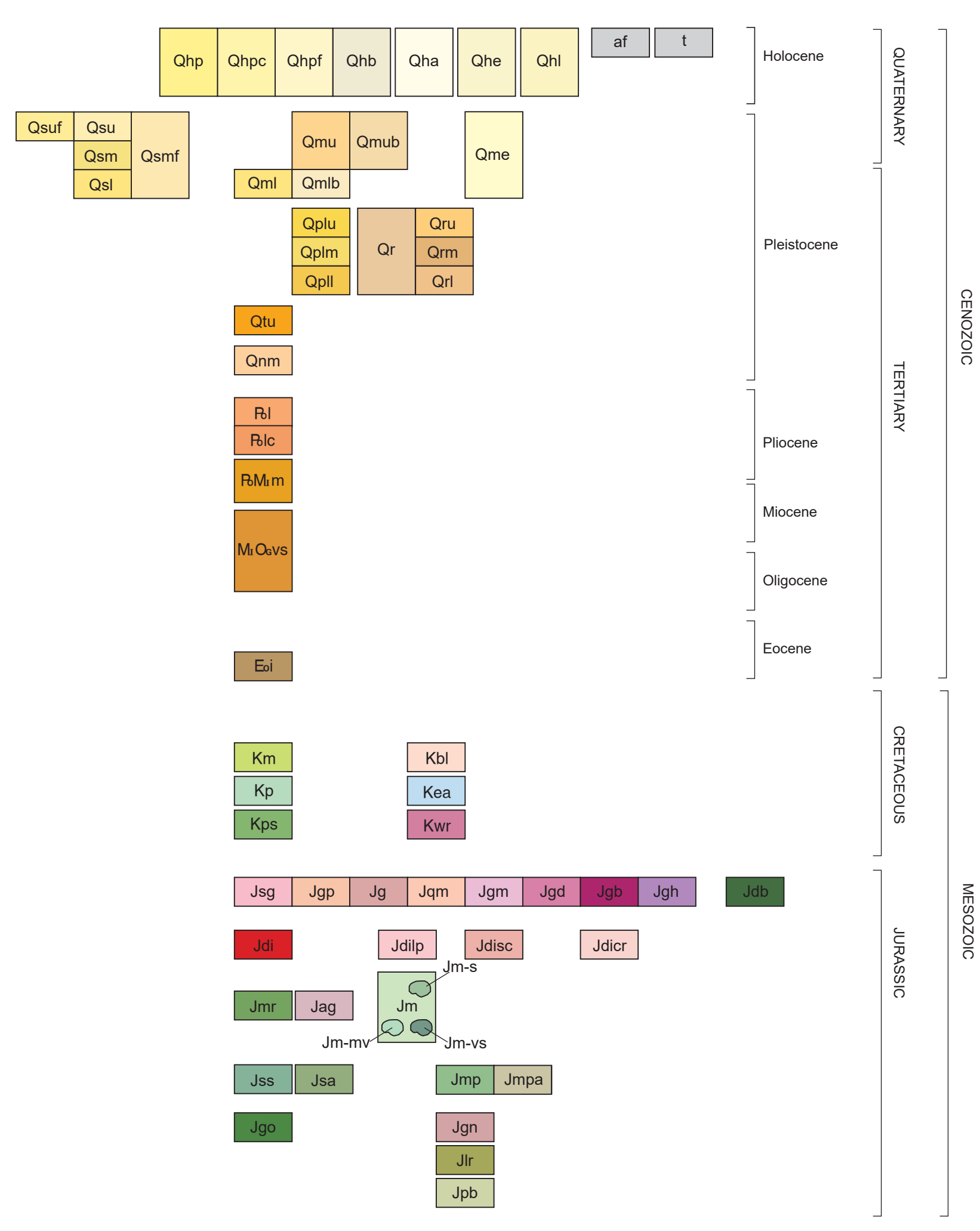
(See pamphlet for complete description of map units)

- Quaternary to Pliocene Surficial Deposits**
- af Artificial fill
  - t Dredge tailings
  - Qha Young alluvium
  - Qhb Basin deposits
  - Qhe Eolian deposits
  - Qhl Lacustrine deposits
  - Qhp Patterson, alluvium, proximal fans
  - Qhpc Patterson alluvium, channel deposits
  - Qhpf Patterson alluvium, medial and distal fans
  - Qsu San Luis Ranch alluvium, coarse upper member
  - Qsuf San Luis Ranch alluvium, fine upper member
  - Qsm San Luis Ranch alluvium, coarse middle member
  - Qsmf San Luis Ranch alluvium, fine middle member
  - Qsl San Luis Ranch alluvium, lower member
  - Qplu Los Banos alluvium, upper member
  - Qplm Los Banos alluvium, middle member
  - Qpll Los Banos alluvium, lower member
  - Qmu Modesto Formation, upper member, undifferentiated
  - Qmub Modesto Formation, upper member, basin deposits
  - Qme Modesto Formation, eolian deposits undifferentiated
  - Qml Modesto Formation lower member, undifferentiated
  - Qmb Modesto Formation, lower member, basin deposits
  - Qr Riverbank Formation, undifferentiated
  - Qru Riverbank Formation, upper member
  - Qrm Riverbank Formation, middle member
  - Qrl Riverbank Formation, lower member
  - Qnu Turlock Lake Formation, upper member
  - Qnm North Merced Gravel
  - RI Laguna Formation
  - RIc Laguna Formation, China Hat Gravel member
- Cretaceous Granitic Rocks**
- Kbl Bass Lake Tonalite
  - Kea Leucotonalite North of Eastman Lake
  - Kwr White Rock Pluton
- Jurassic Granitic Rocks**
- Jgb Layered Gabbro
  - Jgd Meladiorite
  - Jdb Diabase
  - Jgm Agmatic
  - Jqm Quartz Monzonite
  - Jg Granite
  - Jgp Granophyre
  - Jsg Sodic Granophyre
  - Jgh Gabbro of the Hornitos Pluton
  - Jmr Metamorphic and heterogeneous altered rock
  - Jag Coarse altered gabbro
  - Jdi Diorite
  - Jlpl La Paloma pluton
  - Jdsc Santa Cruz Mtn. pluton
  - Jdcr Courthouse Rock pluton
- Jurassic Metamorphic Rocks**
- Jss Salt Springs Slate
  - Jsa Salt Spring Slate, argillaceous sandstone
  - Jmp Mariposa Formation
  - Jmpa Mariposa Formation, schist
  - Jgn Gneiss
  - Jm Mélange
  - Jm-s Mélange, metasedimentary member
  - Jm-mv Mélange, metavolcanic member
  - Jm-vs Mélange, variegated schist member
  - Jgv Gopher Ridge Volcanics
  - Jlr Logtown Ridge Formation
  - Jpb Pelton Blanco Formation
  - Jsp Serpentine

- Cenozoic Sedimentary and Volcanic Paleochannel Deposits**
- RMm Melton Formation
  - MQvs Valley Springs Formation
  - Ea Lone Formation

- Sedimentary Rocks of the Great Valley Sequence**
- Km Moreno Shale
  - Kp Panoche Formation claystone
  - Kps Panoche Formation sandstone

## CORRELATION OF MAP UNITS



## MAP SYMBOLOGY

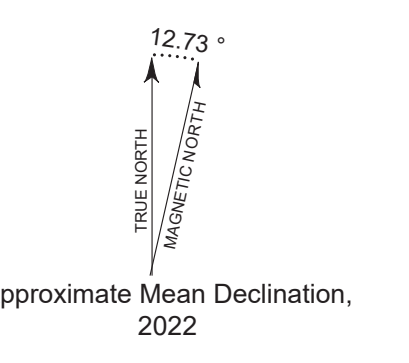
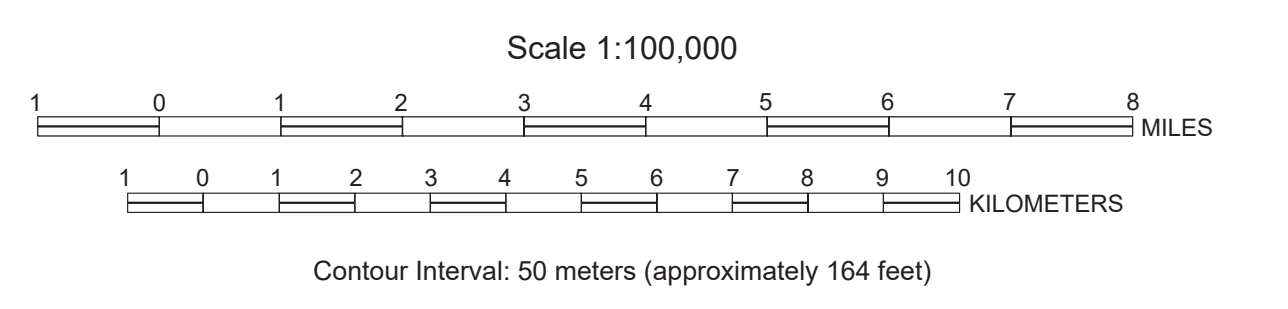
- Contact between map units: Solid where accurately located; long dash where approximately located; short dash where inferred; dotted where concealed; queried where identity or existence is uncertain.
- Fault: Solid where accurately located; long dash where approximately located; short dash where inferred; dotted where concealed; queried where identity or existence is uncertain. Arrow and number indicate direction and angle of dip of fault plane.
- Quartz vein; quartz vein related to hydrothermal mineralization along the Melones Fault Zone.
- Dike
- Strike and dip of geologic structure: Number indicates dip angle in degrees.
- Bedding
- Vertical Bedding
- Primary foliation
- Secondary foliation
- Primary Vertical foliation
- Primary joint

## GEOLOGIC DATA SOURCES

(see pamphlet for complete citation)

- Arena:** Marchand, 1976b.
- Atwater:** Marchand, 1976b.
- Brenda:** Marchand, 1976d.
- Biss Ranch:** Marchand, 1976d.
- Caltheys Valley:** Best, 1961; Best, 1963.
- Charwellia:** Marchand, 1976d (1:24,000).
- Cressey:** Marchand, 1976a.
- Delta Ranch:** Lettis, 1982.
- EJ Nide:** Marchand, 1976c.
- Gastine:** Marchand, 1976b; Lettis, 1982.
- Hatch:** Marchand, 1976a.
- Haystack Mtn:** Marchand, 1976a; Paterson and others, 1991.
- Illinois Hill:** Best, 1961; Best, 1963.
- Indian Gulch:** Marchand, 1976c; Best, 1961; Best, 1963; Paterson and others, 1991.
- Ingotar:** Lettis, 1982.
- Kismet:** Marchand, 1976d.
- Le Grand:** Marchand, 1976c.
- Los Banos:** Lettis, 1982.
- Merced:** Marchand, 1976b.
- Owens Reservoir:** Marchand, 1976b; Best, 1961; Best, 1963.
- Plainsburg:** Marchand, 1976c.
- Plano:** Marchand, 1976b.
- Raynor Creek:** Marchand, 1976c; Elrelich, 1965.
- Sandy Marsh:** Marchand, 1976c.
- San Luis Ranch:** Marchand, 1976c; Lettis, 1982.
- Santa Rita Bridge:** Marchand, 1976d; Lettis, 1982.
- Stevinson:** Marchand, 1976b.
- Turlock:** Marchand, 1976a.
- Turner Ranch:** Marchand and Wagner, 1980.
- Volta:** Lettis, 1982; Dibbice and Minch, 2007.
- Waiata:** Marchand, 1976a.
- Yosemite Lake:** Marchand, 1976a.

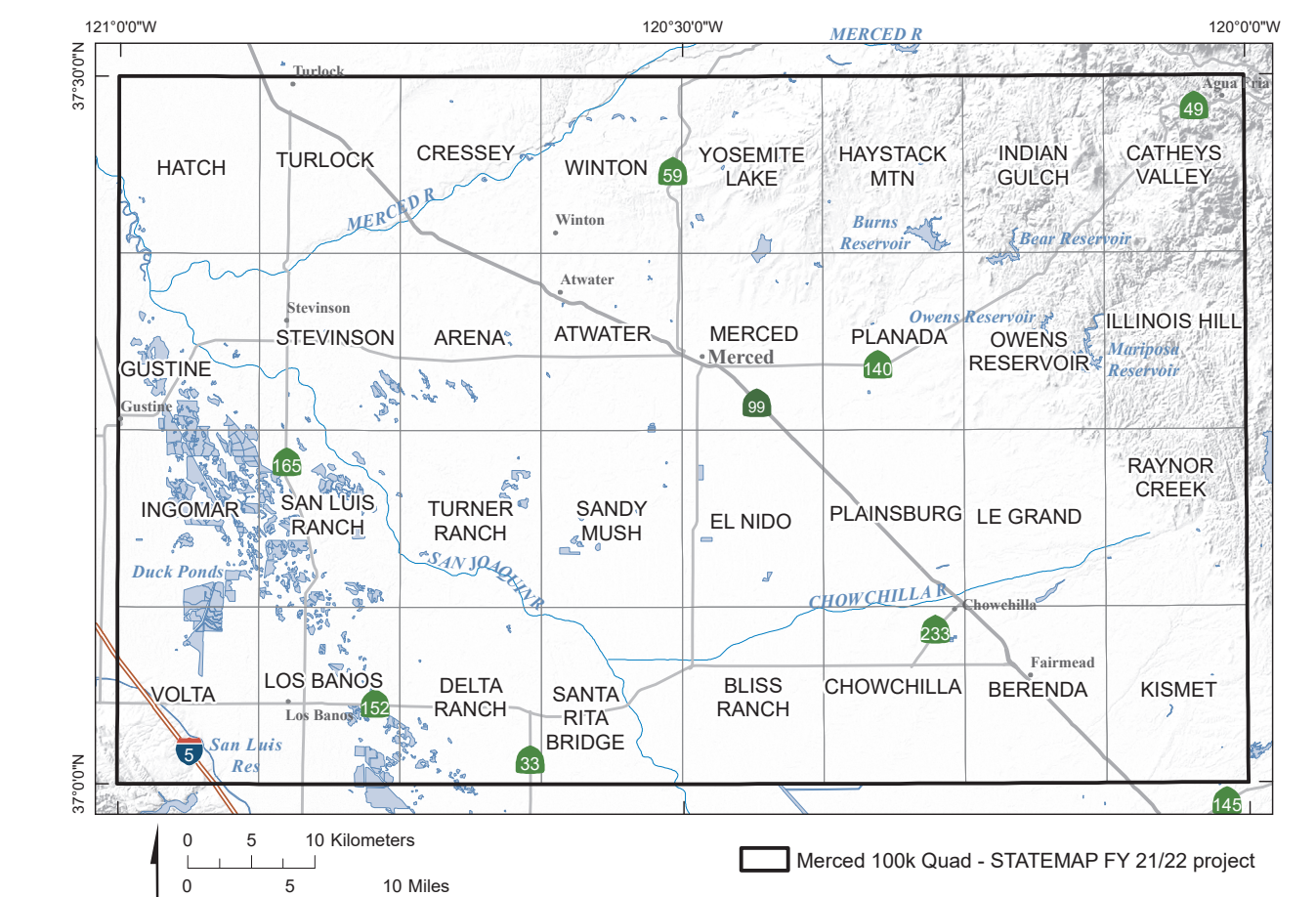
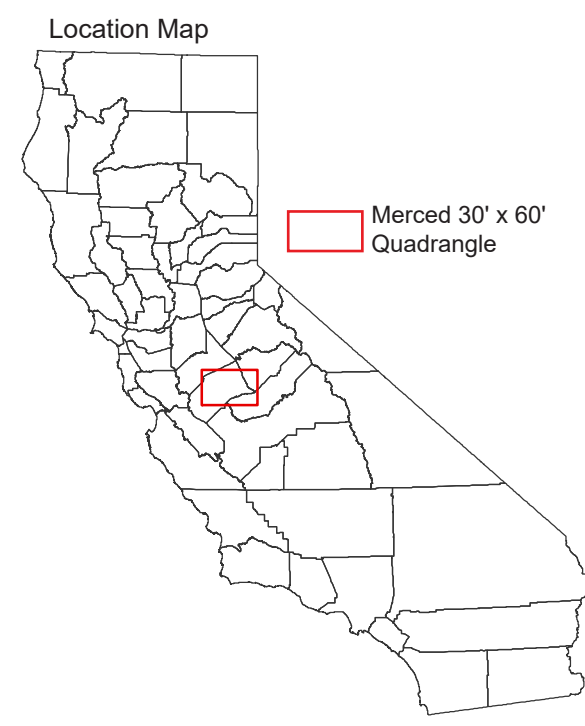
Coordinate System:  
Universal Transverse Mercator, Zone 10N  
North American Datum 1983  
Topographic contours and shaded relief image derived from USGS 1/3 arc-second National Elevation Dataset (NED). Hydrology from the National Hydrography Dataset (NHD). Culture and transportation data from the USGS National Map.



Geology compiled 2016 - 2021. Compilation updated into GEMS geodatabase 2020-2022. This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program, Stateplan Award no. GS21AC10701.

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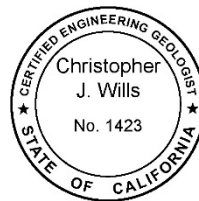
**PUBLICATION TITLE:** PRELIMINARY GEOLOGIC MAP OF THE MERCED 30' x 60' QUADRANGLE, CALIFORNIA: PRELIMINARY GEOLOGIC MAP 22-10.

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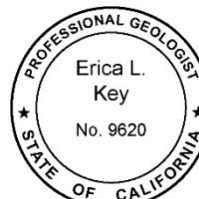
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