

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, Statemap Award no. G21AC10701.

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Scale 1:100,000  
Contour Interval: 50 meters (approximately 164 feet)  
Approximate Mean Declination, 2022

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.

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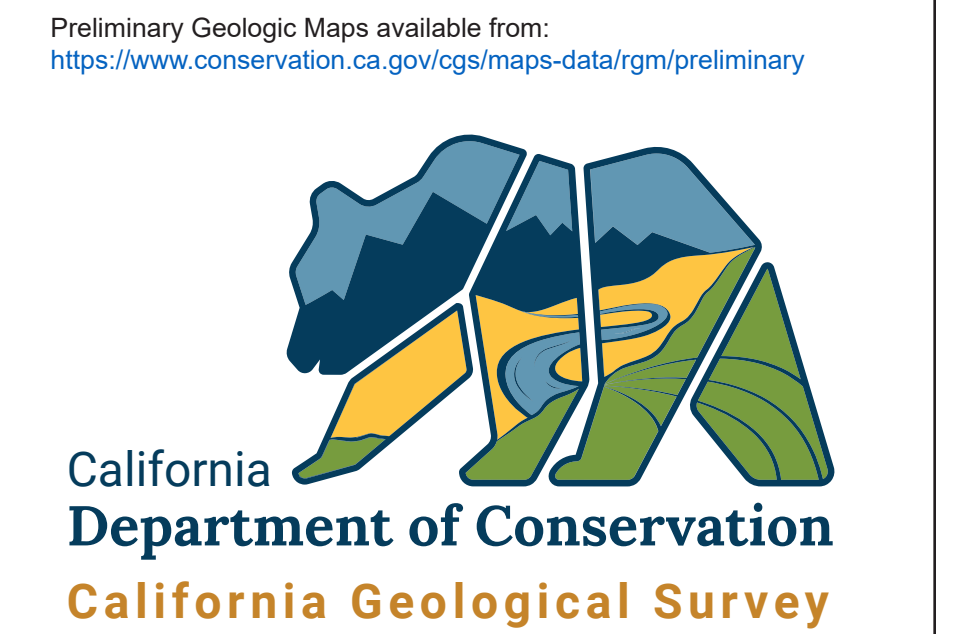
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# PRELIMINARY GEOLOGIC MAP OF THE OAKDALE 30' x 60' QUADRANGLE, CALIFORNIA

VERSION 1.0

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2022

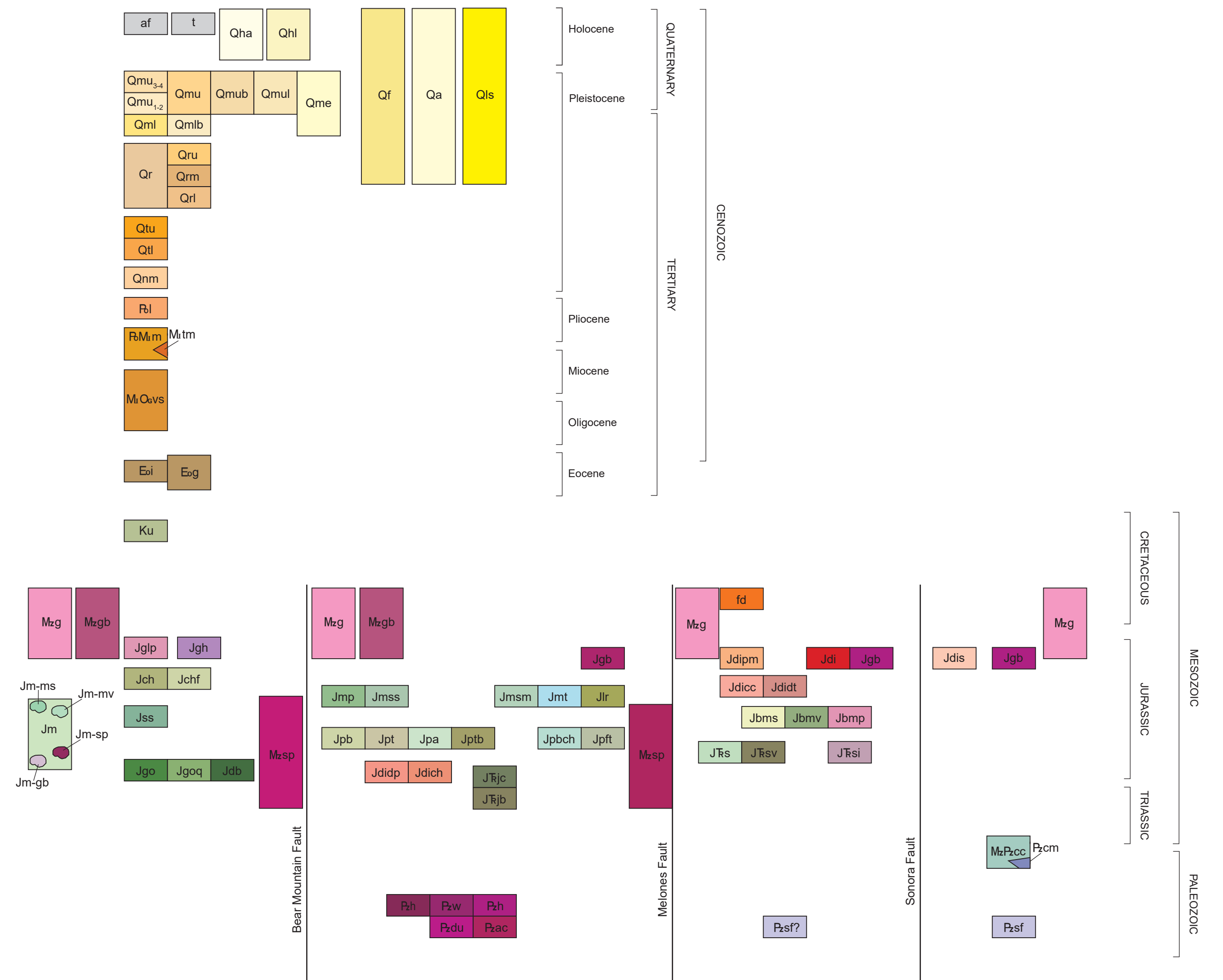


## LIST OF MAP UNITS

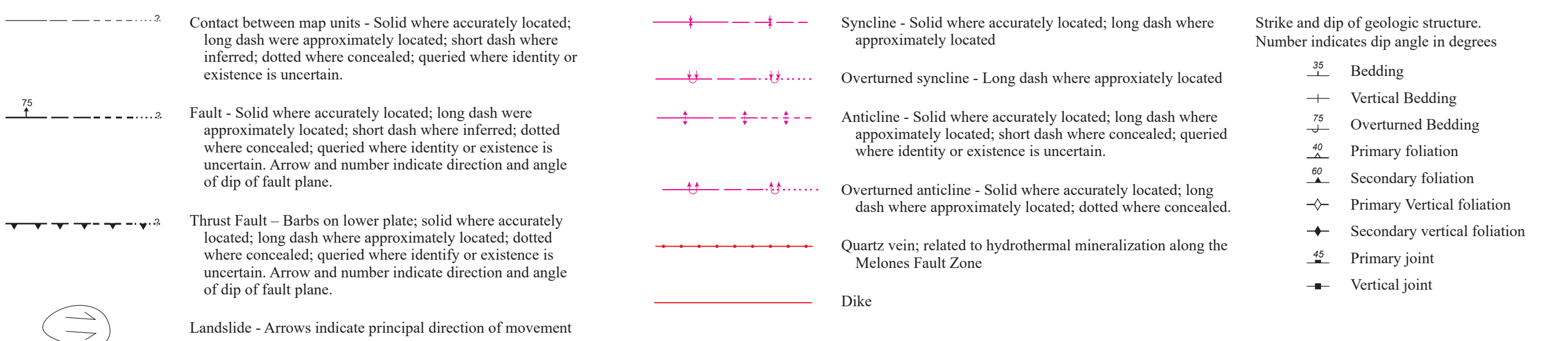
(See pamphlet for complete description of map units)

- Quaternary to Pliocene Surficial Deposits**
  - af Artificial fill
  - t Dredge tailings
  - Qha Young alluvium
  - Qh1 Lacustrine deposits
  - Qa Alluvium
  - Qr Alluvial fan deposits
  - Qis Landslide deposits
  - Qmu Modesto Formation, upper member, undifferentiated
  - Qmu3-4 Modesto Formation, upper member, 3rd and 4th terrace
  - Qmu1-2 Modesto Formation, upper member, 1st and 2nd terrace
  - Qmub Modesto Formation, upper member, basin deposits
  - Qmul Modesto Formation, upper member, lake and marsh deposits
  - Qml Modesto Formation lower member, undifferentiated
  - Qmb Modesto Formation, lower member, alluvial basin deposits
  - Qme Modesto Formation, collian 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
  - Qo Turlock Lake Formation, lower member
  - Qnn North Merced Gravel
  - Ql Lagoon Formation
- Cenozoic Sedimentary and Volcanic Paleochannel Deposits**
  - RMm Melsten Formation
  - Mtm Tuolumne Table Mountain Latite
  - M.Ouv Valley Springs Formation
  - Ev Lone Formation
  - Evg Eocene Gravels
- Mesozoic to Paleozoic Metamorphic and Plutonic Bedrock**
  - Ku Upper Cretaceous sediments
  - fd Felsite dikes
  - Mg Granodioritic and related plutonic rocks, undifferentiated
  - Mgb Gabbroic and related plutonic rocks, undifferentiated
  - Jd Diorite, undifferentiated
  - Jdpm Diorite of Page Mountain
  - Jglp La Paloma Pluton
  - Jgh Hornitos Pluton
  - Jdcc Cobbs Creek Pluton
  - Jds Standard Pluton
  - Jdgt Dagtown Pluton
  - Jdtd Diorite of Den Pedro
- Diorite of Chinese Camp**
  - Jcb Gabbro, undifferentiated
  - Jm Mélange
  - Jm-mv Mélange, metavolcanic member
  - Jm-sp Mélange, serpentinite member
  - Jm-gb Mélange, gabbro member
  - Jm-ms Mélange, metasedimentary member
  - Jdb Diabase
  - Jch Copper Hill Volcanics
  - Jcht felsic facies
  - Jss Salt Springs Slate
  - Jmp Mariposa Formation
  - Jmsa Metagraywacke
  - Jmsn Mixed sandstone and mudstone
  - Jmt Tuffaceous sandstone and mudstone
  - Jgp Gopher Ridge Volcanics
  - Jgpc Felsic facies
  - Jlr Logtown Formation
  - Jbms Bullion Mountain sequence metasedimentary and metavolcanic rocks
  - Jbmv Bullion Mountain sequence volcanics
  - Jbnp Bullion Mountain pluton
  - Jpb Peñon Blanco Formation
  - Jpt Peñon Blanco Formation, tuffaceous turbidite member
  - Jpb Peñon Blanco Formation, tuff breccia member
  - Jpa Peñon Blanco Formation, augite plagioclase porphyry member
  - Jpbh Peñon Blanco Formation, tuffaceous and silty chert member
  - Jpt Peñon Blanco Formation, fine volcanoclastic sandstone and tuffaceous turbidite member
  - Jjp Jasper Point Formation, chert member
  - Jpba Jasper Point Formation, basalt member
  - Jts Sullivan Creek terrane, undifferentiated
  - Jtsv Sullivan Creek terrane, volcanic member
  - Msp Serpentinite
  - MaPcc Calaveras Complex
  - Pcm Marble
- Tuolumne ultramafic complex**
  - Pw Wehrlite
  - Pb Harzburgite
  - Pdu Dunite
  - Pac Garnet Amphibolite and Chert
  - Psf Shoo Fly Complex

## CORRELATION OF MAP UNITS



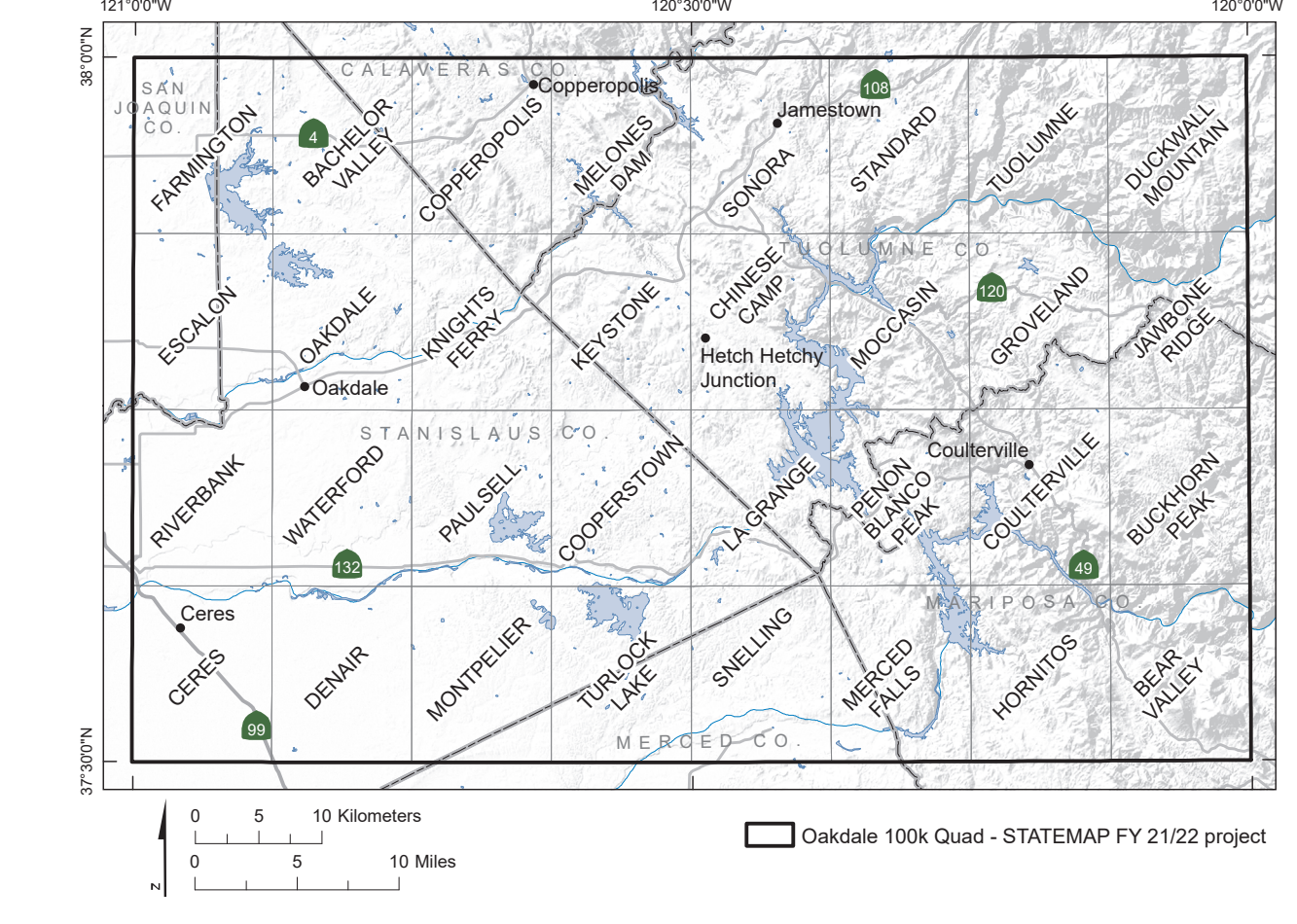
## MAP SYMBOLOLOGY



## GEOLOGIC DATA SOURCES

(Listed by 7.5' quadrangle; see pamphlet for complete citation)

- Bachelor Valley** - Marchand and others, 1981b.
- Bear Valley** - Bowen, 1969; Herzig and Sharp, 1992.
- Bearkorn Peak** - Bowen, 1969; Herzig and Sharp, 1992.
- Ceres** - Marchand, 1980.
- Chinese Camp** - Morgan, 1976; Woodward-Clyde Consultants, 1978.
- Cooperstown** - Woodward-Clyde Consultants, 1978; Marchand and others, 1981a.
- Copperopolis** - Talafiero and Solari, 1948; Bartow and others, 1981; Woodward-Clyde Consultants, 1978.
- Coulterville** - Bowen, 1969; Evans and Bowen, 1977; Bogen, 1983.
- Denair** - Marchand, 1980.
- Duckwall Mountain** - Merguerian, 1981.
- Eschalon** - Arkley, 1964; McElhinney, 1992; Rule, 2007.
- Farmington** - Marchand and others, 1981b.
- Groveland** - Evans and Bowen, 1977; Merguerian, 1981.
- Hermitas** - Bowen, 1969; Bogen, 1983.
- Jawbone Ridge** - Merguerian, 1981.
- Keystone** - Talafiero and Solari, 1948; Woodward-Clyde Consultants, 1978 (scale undetermined); Bartow and others, 1981 (1:62,500).
- La Grange** - Mammion, 1960; Woodward-Clyde Consultants, 1978; Marchand and others, 1981a.
- Melones Dam** - Talafiero and Solari, 1948; Bartow and others, 1981; Woodward-Clyde Consultants, 1978.
- Merced Falls** - Marchand, 1981; Barry, 1993.
- Moccasin** - Morgan, 1976; Evans and Bowen, 1977; Woodward-Clyde Consultants, 1978; Bogen, 1983.
- Montpelier** - Marchand, 1980.
- Oakdale** - Arkley, 1964; Rule, 2007.
- Palen** - Arkley, 1964.
- Peñon Blanco Peak** - Woodward-Clyde Consultants, 1978; Bogen, 1983; Barry, 1993; Higgins, 1997.
- Riverbank** - Merguerian, 1981; Arkley, 1964.
- Snelling** - Marchand, 1981.
- Sonora** - Eric and others, 1955; Woodward-Clyde Consultants, 1978.
- Standard** - Hart, 1959; Higgins, 1997.
- Tuolumne** - Merguerian, 1981; Higgins, 1997.
- Turlock Lake** - Marchand and Wagner, 1980.
- Waterford** - Arkley, 1964.

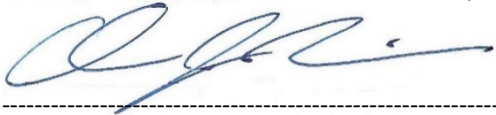


## AUTHORSHIP DOCUMENTATION AND PRODUCT LIMITATIONS

**PUBLICATION TITLE:** PRELIMINARY GEOLOGIC MAP OF THE OAKDALE 30' x 60' QUADRANGLE, CALIFORNIA: PRELIMINARY GEOLOGIC MAP 22-09.

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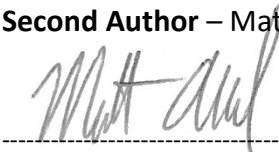
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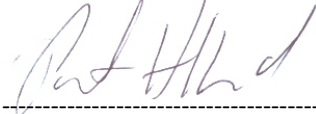


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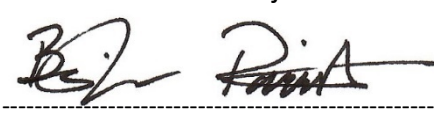
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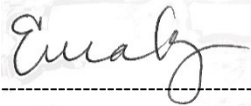
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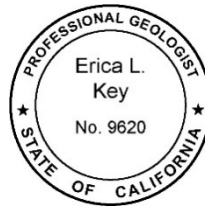


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