

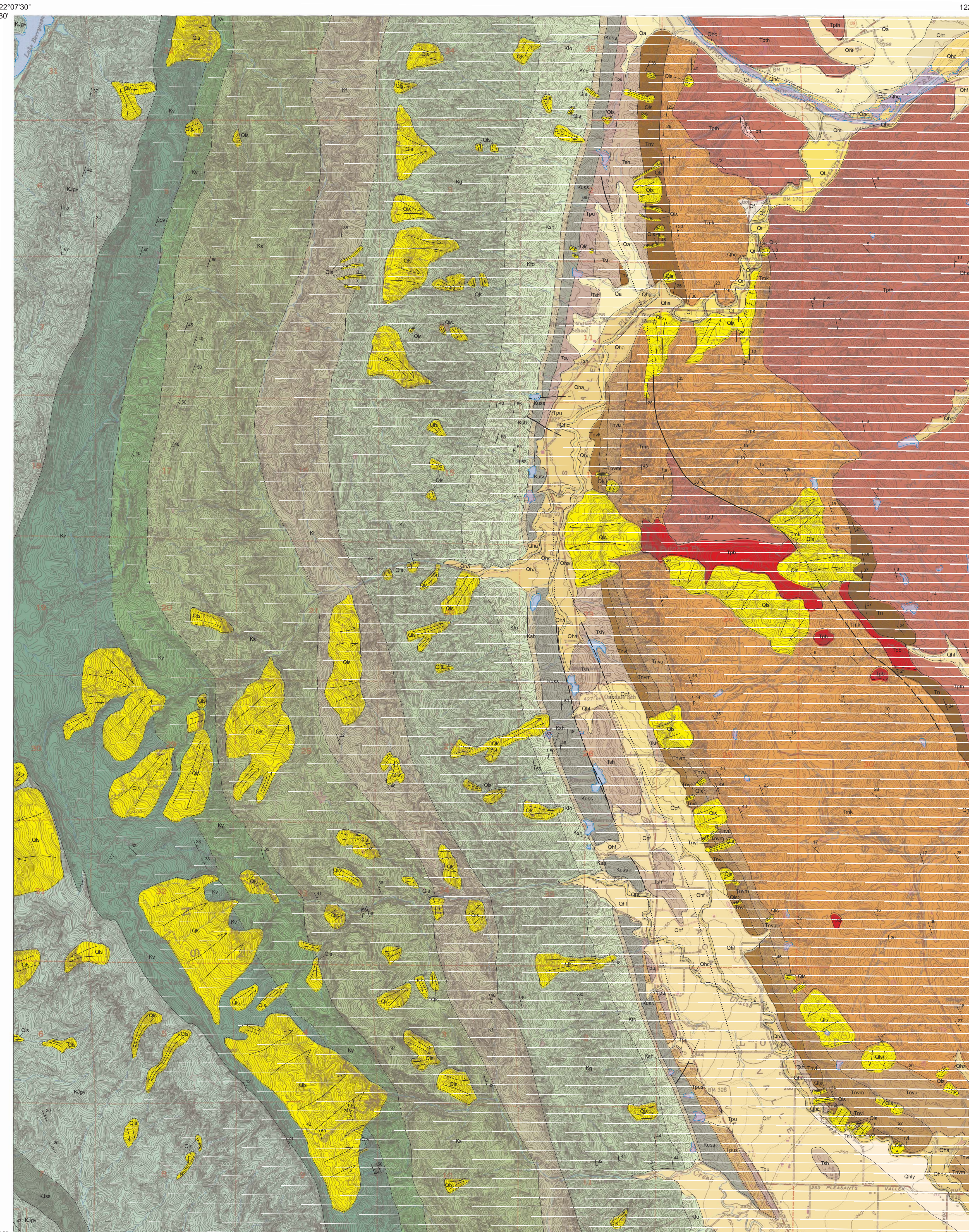
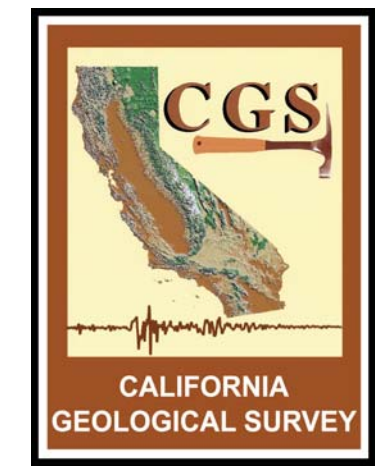
# GEOLOGIC MAP OF THE MT. VACA 7.5' QUADRANGLE SOLANO, NAPA, AND YOLO COUNTIES, CALIFORNIA: A DIGITAL DATABASE



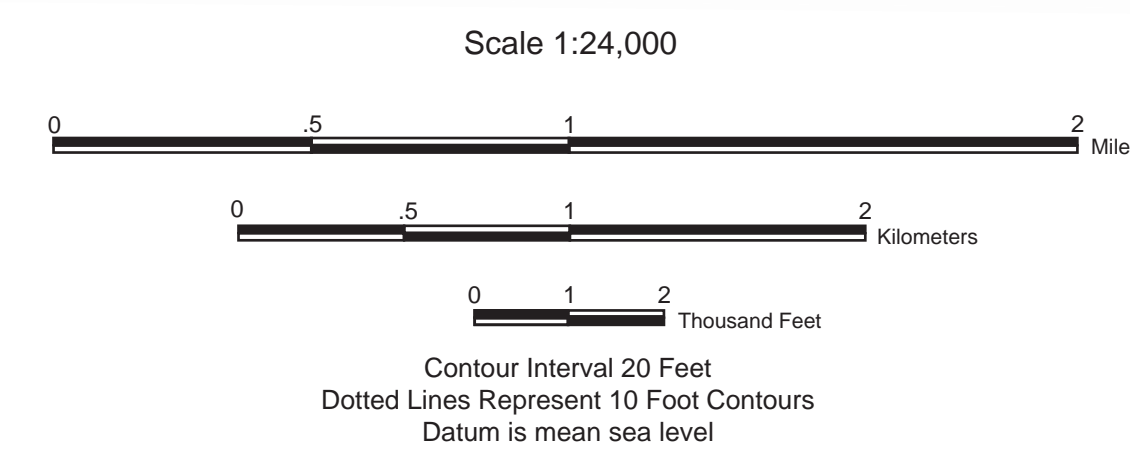
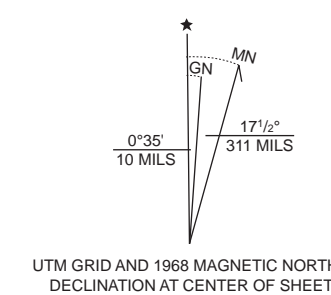
VERSION 1.0  
By  
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Digital Database  
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2007

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Topographic base from U.S. Geological Survey  
Mt. Vaca 7.5-minute Quadrangle, 1968  
UTM projection, Zone 10, North American Datum 1927



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## DESCRIPTION OF MAP UNITS

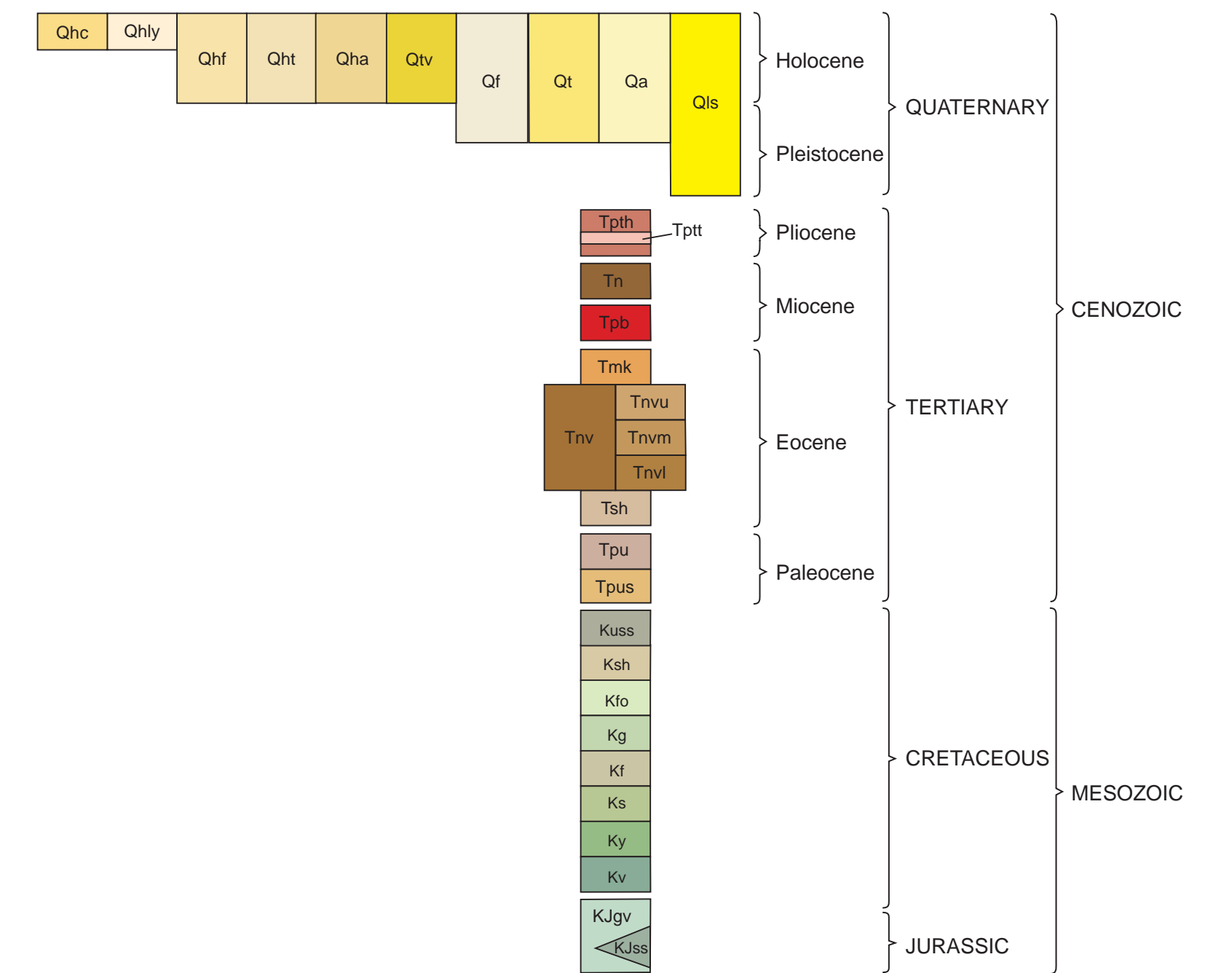
(See Witter and others (2006), for more information on Quaternary units).

- Qhc** Modern stream channel deposits (Holocene <150 years) - Deposits in active, natural stream channels; consists of loose alluvial sand, gravel, and silt.
- Qhly** Alluvial fan levee deposits (Holocene < 1,000 years) - Sand and silt overbank deposits along channel margins of young alluvial fans.
- Qht** Stream terrace deposits (Holocene) - Stream terraces deposited as point bar and overbank deposits; composed of moderately to well-sorted and bedded sand, gravel, silt, and minor clay.
- Qha** Alluvium, undivided (Holocene) - Alluvium deposited on fans, terraces, or in basins; composed of sand, gravel, silt, and clay that are poorly sorted.
- Qhf** Alluvial fan deposits (Holocene) - Alluvial fan sediment deposited by streams emanating from mountain drainages onto alluvial valleys; composed of moderately to poorly sorted sand, gravel, silt, and clay.
- Qtv** Travertine (Holocene) - Youthful, vuggy travertine deposits and related calcareous material forming coatings and crusts in two small stream channels at the top of Gates Canyon. These deposits are similar to larger travertine deposits associated with cold saline springs emanating from Upper Cretaceous rocks at Cement Hill and Tolenas Springs in the Fairfield North quadrangle.
- Qt** Stream terrace deposits (latest Pleistocene to Holocene) - Deposited in point bar and overbank settings where deposits might be of late Pleistocene or Holocene age; composed of unconsolidated, poorly sorted, clayey sand and sandy clay with gravel.
- Ql** Alluvial fan deposits (latest Pleistocene to Holocene) - Alluvial fan sediment on gently-sloping, fan-shaped, relatively undivided alluvial surfaces; composed of moderately to poorly sorted sand, gravel, silt, and clay.
- Qa** Alluvium, undivided (latest Pleistocene to Holocene) - Alluvial deposits on flat, relatively undivided surfaces that cannot be delineated as individual fans, terraces or basins.
- Qls** Landslide deposits (Holocene and Pleistocene) - Includes debris flows and block slides.
- Tpth** Tehama Formation (Pliocene) - Volcaniclastic pebble- to cobble-conglomerate, tuffaceous sandstone, siltstone, and claystone of continental origin. Gravels dominated by well-rounded clasts of andesite. Unit contains white ash tuff and tuff-breccia.
- Tpvt** Putah Tuff member (Pliocene) - Water-laid tuff and tuffaceous sandstone near the base of the Tehama Formation. This unit has yielded a radiometric age of 3.3 ± 0.1 Ma (Miller, 1966)
- Tr** Neroly sandstone (late Miocene) - Bluish-gray, fine- to medium-grained lithic sandstone, tuffaceous sandstone, and light-gray, white-weathering tuffaceous shale.
- Tpb** Putnam Peak Basalt (Miocene) - Olivine-bearing basalt flow. Columnar jointing weakly developed locally. Correlated with the Lovejoy Basalt of the Sierra Nevada (Durrill, 1959; Siegel, 1988) based on geochemical similarities, indicating that it is the distal remnant of extensive flood basalts that extended from the Sierra Nevada to the Coast Ranges. Recent Ar/Ar analysis has yielded an age of about 16 Ma (Page and others, 1995; Wagner and others, 2000)
- Tmk** Markley Sandstone (Eocene) - Brown, micaceous arkosic sandstone. Also contains sandy shale, carbonaceous shales and lenses of conglomerate. Locally exhibits cross bedding, soft-sediment deformation and subaqueous debris flow deposits containing mudstone boulders up to 3 feet in diameter. Quartz grains commonly coated with iron oxide.
- Tnv** Nortonville Shale Member of the Kreyhagen Formation (Eocene) - Light gray to brownish-gray, thinly-laminated shaly siltstone and concretionary shale, brown mudstone, micaceous lithic sandstone and arkose commonly containing fossil foraminifera. Shales and mudstones are locally glauconitic. In the Vacaville area, a persistent sandstone lens separates the unit into three mappable members.
- Trnu** Upper member - Brown mudstone and clay shale, locally carbonaceous.
- Trnm** Middle member - Argillaceous feldspathic arkose.
- Trnl** Lower member - Mudstone and silty shale containing fossil foraminifera, locally rich in glauconite.
- Tsh** Shale (Eocene) - Brown to dark-gray mudstone containing fossil foraminifera, micaceous shale, and sandy shale. Unit contains glauconitic horizons. Previously mapped as the Capay Formation (Weaver, 1949) and the Vacaville Shale (Merriam and Turner, 1937). This unit contains foraminifera and calcareous nanofossils of middle and early Eocene age (Almgren and others, 1988; Prothro and Brabb, 2001; Ristau, unpublished data, 2007).
- Tpu** Shale and sandstone (Paleocene) - Brown to brownish-gray shale and sandy mudstone with brown friable thin beds of glauconite-bearing bottle waste and quartz muscovite sandstone. This unit contains foraminifera of Paleocene age (Goymer, and others, 2002).
- Tpus** Basal sandstone member - White, clean mica- and quartz-rich sandstone, cross-bedded in places.
- Great Valley Sequence**
- Kuss** Sandstone (Late Cretaceous) - Brown to brownish-gray, fine- to medium-grained sandstone.
- Ksh** Shale (Late Cretaceous) - Brown to gray siliceous shale, contains radiolarians and foraminifera of Late Cretaceous age (Ristau, unpublished data, 2007).
- Kfo** Forbes Formation (Late Cretaceous) - Thick beds of fine- to coarse-grained sandstone with shell fragments grading upward into interbedded siltstone and shale.
- Kg** Guinda Formation (Late Cretaceous) - Thick-bedded to massive sandstone grading upward into siltstone and shale.
- Kl** Funks Formation (Late Cretaceous) - Siltstone and mudstone with thin beds of sandstone.
- Ks** Sites Formation (Late Cretaceous) - Thick-bedded, laminated fine- to medium-grained sandstone with moderately thick beds of siltstone.
- Ky** Yolo Formation (Late Cretaceous) - Moderately thick-bedded, fine- to coarse-grained sandstone, mudstone and micaceous siltstone.
- Kv** Venado Formation (Late Cretaceous) - Massive to thick-bedded, shale-chip bearing sandstone with minor siltstone. North of the Mount Vaca quadrangle at Monticello Dam, this unit includes a basal submarine slump deposit consisting of megabreccia with angular blocks of sandstone and siltstone in a conglomeratic mudstone matrix.
- Kjgv** Sandstone and shale (Early Cretaceous and Late Jurassic) - Mostly thin-bedded sandstone with interbedded siltstone, shale, and mudstone. Contains discontinuous beds of conglomerate.
- Kjss** Ridge-forming sandstone beds.

## MAP SYMBOLS

- Contact between map units - Solid where accurately located, dashed where approximately located.
- - - Fault - Solid where accurately located, dashed where approximately located, dotted where concealed.
- ↖ ↘ Strike and dip of bedding.
- ↔ Landslide - Arrows indicate principal direction of movement.

## CORRELATION OF MAP UNITS



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