

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

CALIFORNIA GEOLOGICAL SURVEY
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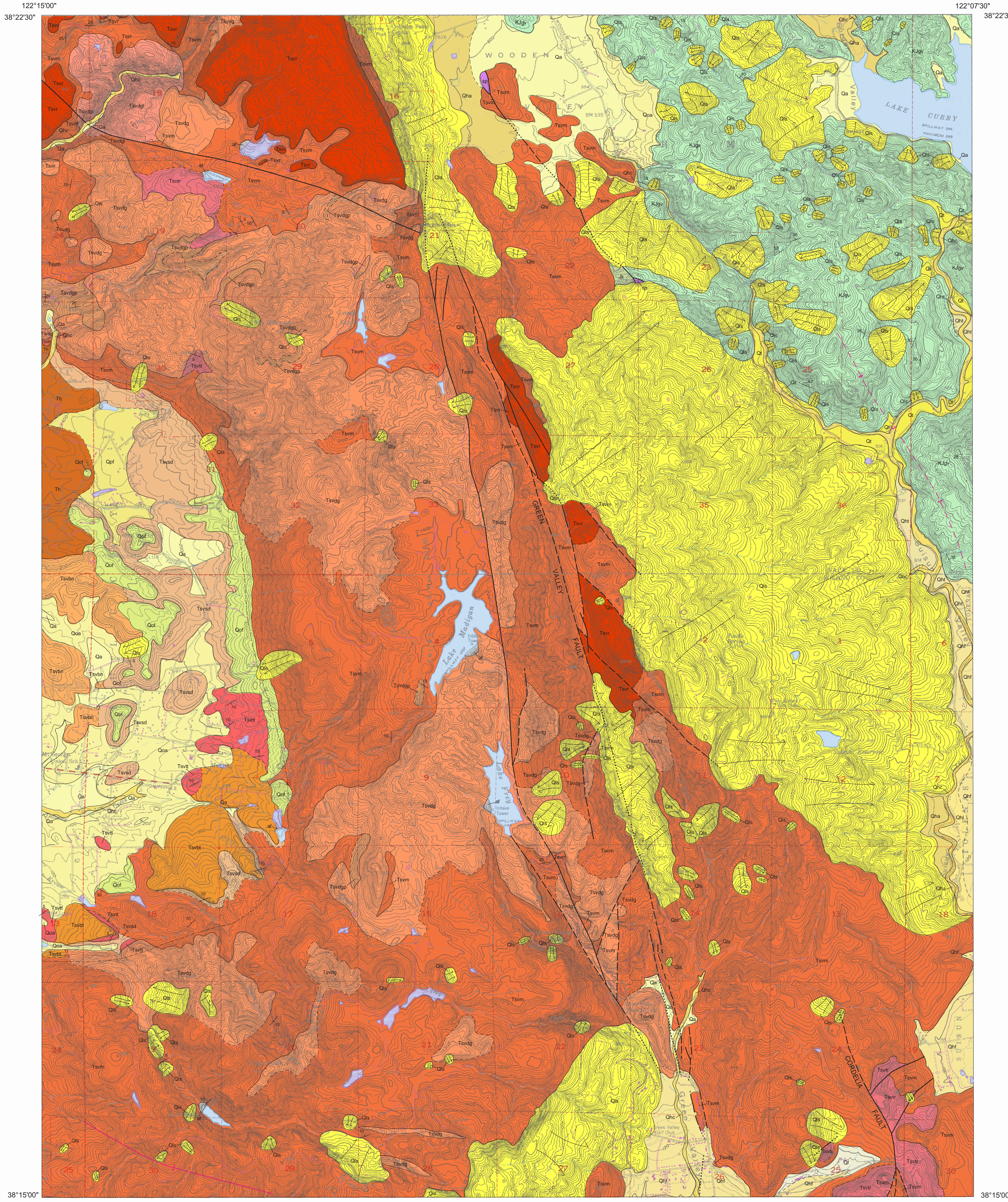
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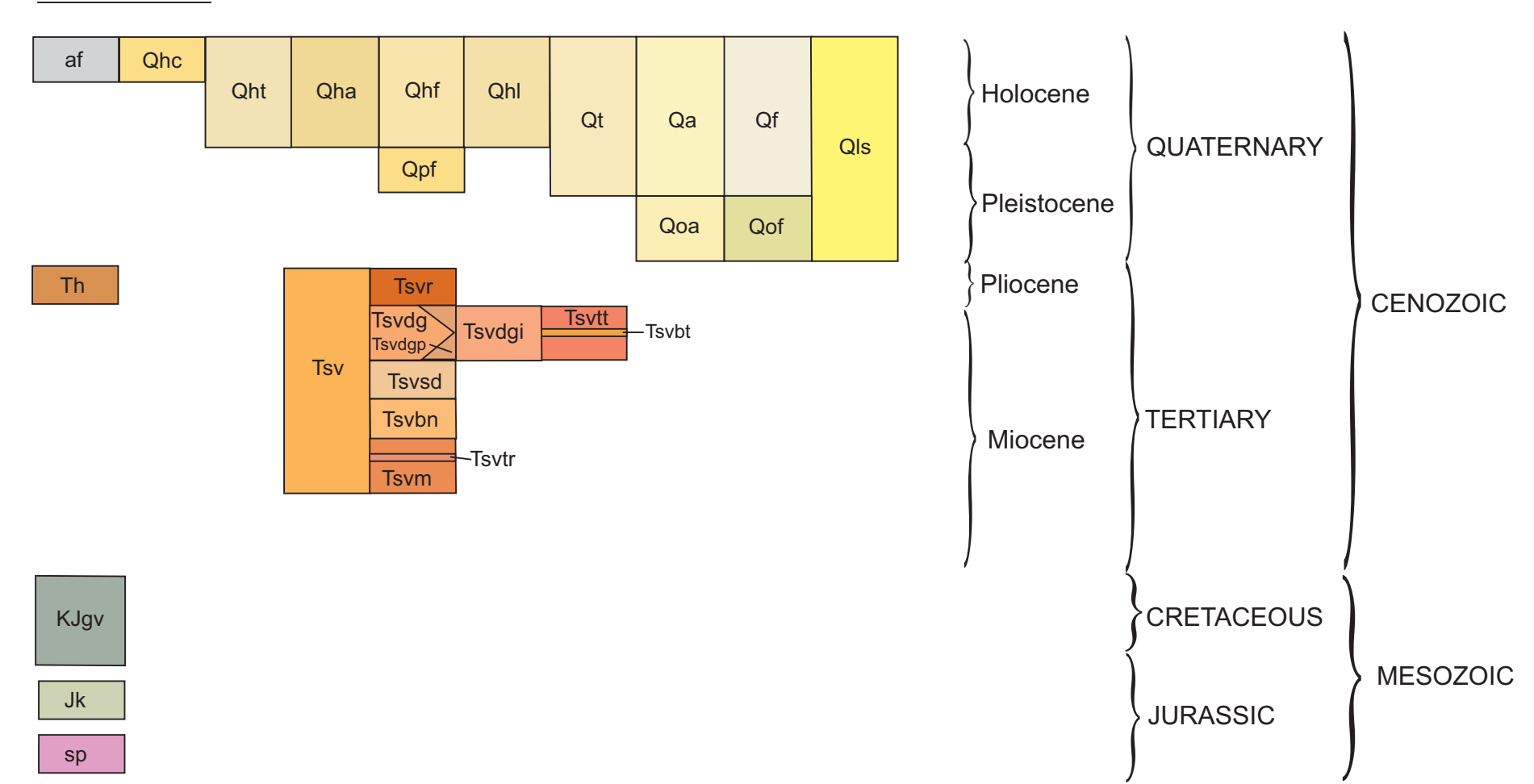
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 2004

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Unit Correlation



Unit Explanation

- (See Knudsen and others (2000), for more information on Quaternary units).
- af** Artificial fill (Holocene, historic) - May be engineered and/or non-engineered.
 - Qhc** Modern stream channel deposits (Holocene <150 years) - Deposits in active, natural stream channels; consists of loose alluvial sand, gravel, and silt.
 - Qht** Stream terrace deposits (Holocene <10,000 years) - Stream terraces deposited as point bar and overbank deposits along Lichau Creek; 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.
 - Qhl** Fan levee deposits (Holocene) - Holocene fan sediments deposited as long, low ridges oriented down fan. The deposits contain coarser material than the adjoining areas.
 - Qt** Stream terrace deposits (late 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.
 - Qa** Alluvium, undivided (latest Pleistocene to Holocene) - Flat, relatively undivided fan, terrace, and basin deposits.
 - Qf** Alluvial fan deposits (latest Pleistocene <-30,000 years to Holocene) - Sand, gravel, silt and clay mapped on gently sloping, fan-shaped, relatively undivided alluvial surfaces.
 - Qpf** Alluvial fan deposits (late Pleistocene) - Late Pleistocene age is indicated by greater dissection than is present on Holocene fans; composed of moderately to poorly sorted and bedded sand, gravel, silt, and clay.
 - Qoa** Alluvial deposits, undivided (early to late Pleistocene) - Alluvial fan, stream terrace, basin, and channel deposits. Topography is gently rolling with little or no original alluvial surfaces preserved; moderately to deeply dissected.
 - Qof** Alluvial fan deposits (early to late Pleistocene) - Alluvial fan sediment composed of weakly cemented conglomerate and sandstone. Clasts are volcanic, subrounded, and range up to 8 inches in diameter. Topography is moderately rolling with little or no original alluvial surfaces preserved; deeply dissected.
 - Qls** Landslide deposits (Holocene and Pleistocene) - Includes debris flows and block slides.
 - Th** Huichica Formation (early Pleistocene and Pliocene) - Gravel, sand, reworked tuff, and clay. A tuff interbed yields a K-Ar date of 4.09±0.19 Ma (Fox and others, 1985).
 - Tsv** Sonoma Volcanics, undivided (late Miocene to Pliocene) - Mafic lava flows, breccias, agglomerates, tuff, and tuff breccia. The age range for the Sonoma Volcanics within this quadrangle is 5.5 to 3.9 Ma (Fox and others, 1985). On the western side of the quadrangle a semi-circular basin rimmed by steep volcanic slopes partially surrounds the low hills immediately east of Napa. The hills and surrounding basin are known as the Cup and Saucer. The basin is thought to be a caldera about 7 km in diameter and the low hills a resurgent volcano near the center of the caldera (Fox and others, 1985). The Sonoma Volcanics are divided into the following subunits:
 - Tsvr** Rhyolite ash flow tuff - Black vitrophyre with angular lithic clasts overlying welded tuff with flattened pumice lapilli and unwelded pumice lapilli tuff. This is the youngest volcanic unit within the quadrangle and overlies the older rocks with angular unconformity. The age of the tuff is 3.89±0.01 Ma (Fox and others, 1985).
 - Tsvdgi** Dacite intrusion - Gray porphyritic dacite intrusion in Milliken Canyon. The intrusion domed the overlying volcanic rocks.
 - Tsvdg** Dacite of Mt. George - Flows, domes and shallow intrusions of gray to tan porphyritic dacite. The dacite is typically strongly flow banded. The upper surfaces of flows and the margins of domes and intrusions are commonly perlitic. The base of the flows is a black porphyritic pitchstone and pitchstone breccia. K-Ar ages for the dacite are 4.3±0.2 and 3.7±1.23 Ma (Mankinen, 1972; Fox and others, 1985).
 - Tsvdgp** Pumice breccia, pumice lapilli tuff, and pumice lapilli tuff with lithic fragments and perlitic glass fragments that mantle flows and domes and occur between dacite flows.
 - Tsvit** Tuff of Tulucay Creek - Pumice lapilli tuff interbedded with tuffaceous volcanic agglomerate. Perlitic glass fragments are abundant in some tuff beds. Tsvbt - Basalt of Tulucay Creek. Gray vesicular basalt flow.
 - Tsvsd** Diatomite
 - Tsvbn** Breccia of Napa - Dacite breccia underlying the low hills east of Napa. This unit is likely a resurgent volcano within the caldera.
 - Tsvtr** Tuff of Rockville - Light-gray to white pumice lapilli tuff and welded pumice lapilli tuff overlain by lithic tuff breccia. The tuff is exposed in the southeast corner of the quadrangle and below dacite flows along Monticello Road. Two K-Ar ages for this tuff are 4.8±0.2 Ma on Monticello Road and 4.2±0.04 Ma northwest of Rockville Park (Fox and others, 1985).
 - Tsvm** Mafic flows and breccias - Basalt, basaltic andesite and andesite flows and breccias, interbedded with volcanic agglomerate and tuff.
 - KJgv** Great Valley Sequence (Early Cretaceous and Late Jurassic) - Sandstone, pebble conglomerate, siltstone, and shale.
 - JK** Knoxville Formation (Late Jurassic) - Black shale and thin beds of sandstone. The unit contains only Late Jurassic fossils (Graymer and others, 2002).
 - sp** Serpentinite (Jurassic)

Symbol Explanation

- Contact between map units - Solid where accurately located, dashed where approximately located, dotted where concealed.
- Fault - Solid where accurately located, dashed where approximately located, dotted where concealed.
- - - - - Axis of syncline - Dashed where approximately located, dotted where concealed.
- - - - - Axis of anticline
- Caldera boundary
- Strike and dip of bedding.
- Landslide - Arrows indicate principal direction of movement.

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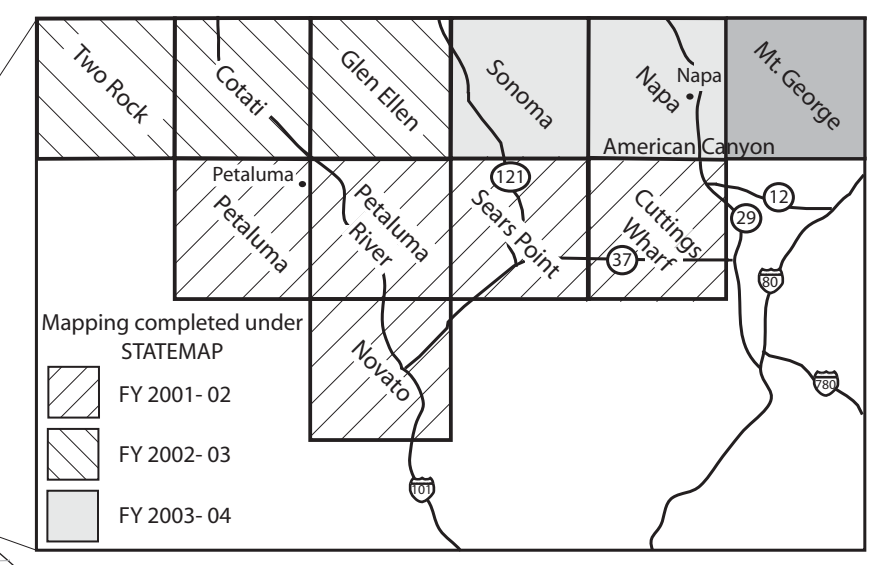
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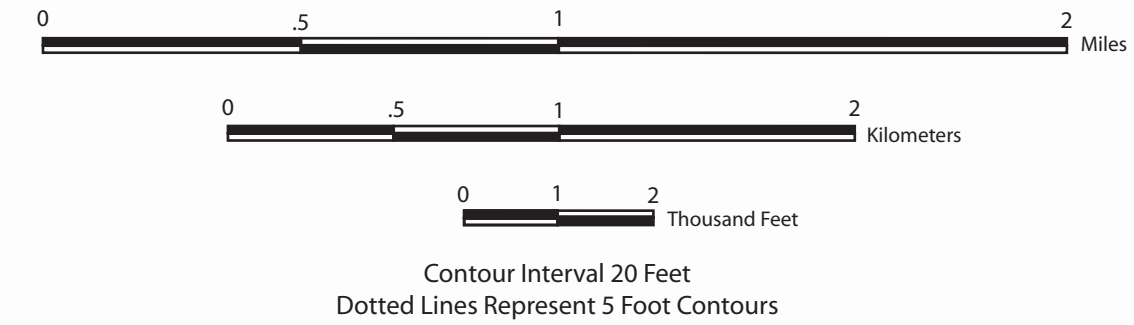
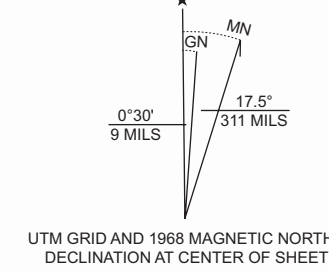
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Topographic base from the U.S. Geological Survey UTM Projection, zone 10, North American Datum 1927



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