CALIFORNIA GEOLOGICAL SURVEY MICHAEL REICHLE, ACTING STATE GEOLOGIST

STATE OF CALIFORNIA - GRAY DAVIS GOVERNOR THE RESOURCES AGENCY - MARY NICHOLS, SECRETARY FOR RESOURCES DEPARTMENT OF CONSERVATION - DARRYLYOUNG, DIRECTOR



Topographic base by U.S. Geological Survey 7.5' Aguanga Quadrangle Polyconic projection, contour interval 20 feet dotted lines 10 feet.



SCALE 1:24000



116° 45' 00" 33° 30' 30" RESERVATION INDIAN CAHUDLLA Tule Peak RIVERSIDE CO SAN DIEGO Qva VALLEY AVE

Prepared in cooperation with the U.S. Geological Survey



	MAP SYM
	Contact—Contact between geole
) U D	Fault —Solid where accurately loc concealed. U = upthrown bloc direction and angle of dip of fa
Qls?	Landslide—Arrows indicate prin- questionable.
70	Strike and dip of sedimentary bed
55	Strike and dip of foliation in meta





33° 22' 30"

116° 45' 00"

DESCRIPTION OF MAP UNITS

CALIFORNIA GEOLOGICAL SURVEY

C A L I F O R N I A CONSERVATION

GEOLOGIC MAP OF THE AGUANGA 7.5' QUADRANGLE SAN DIEGO AND RIVERSIDE COUNTIES, CALIFORNIA: A DIGITAL DATABASE



2003 Digital Preparation by:

Kelly Corriea

CORRELATION OF MAP UNITS

<	> Holocene > Pleistocene	<pre>> QUAT ERNARY</pre>	> CENOZOIC		MODERN SURFICIAL DEPOSITS —Sediment that has been recently tran and deposited in channel and washes, on surfaces of alluvial fans and alluvial and on hill slopes and in artificial fills. Soil-profile development is non-e- Includes:			
•	Pliocene	TERTIAR Y		Qa	Alluvial flood plain deposits (late Holocene) —Active and recently active deposits along canyon floors. Consists of unconsolidated sandy, silty, o bearing alluvium. Does not include alluvial fan deposits at distal ends of chan			
n		<pre> CRETACEOUS JURASSIC </pre>	Besozoic		YOUNG SURFICIAL DEPOSITS —Sedimentary units that are slightly conso to cemented and slightly to moderately dissected. Alluvial fan deposits typical high coarse-fine clast ratios. Young surficial units have upper surfaces that are by slight to moderately developed pedogenic-soil profiles. Includes:			
				Qya	Young alluvial flood plain deposits (Holocene and late Pleistocene)— poorly consolidated, poorly sorted, permeable flood plain deposits			
					OLD SURFICIAL DEPOSITS —Sediments that are moderately consolidat slightly to moderately dissected. Older surficial deposits have upper surfaces capped by moderate to well-developed pedogenic soils. Includes:			
YN veen ge	IBOLS ologic units; dotted	where concealed.		Qoa	Old alluvial flood plain deposits undivided (late to middle Pleistocene) — sediments deposited on canyon floors. Consists of moderately well conso poorly sorted, permeable, commonly slightly dissected gravel, sand, silt, an bearing alluvium			
rately located; dashed where approximately located; dotted where rown block, D = downthrown block. Arrow and number indicate f dip of fault plane. icate principal direction of movement. Queried where existence is			ed where indicate		VERY OLD SURFICIAL UNITS —Sediments that are slightly to well of to indurated, and moderately to well dissected, Upper surfaces are capped to well-developed pedogenic soils. Includes:			
ntary beds.				Qvof	Very old alluvial fan deposits (middle to early Pleistocene)—Mostly dissected, well-indurated, reddish-brown sand and gravel alluvial fan deposits			
n in me	tamorphic rock.				SEDIMENTARY ROCKS			
				Tt	Temecula Arkose (late Pliocene) — The Temecula Arkose is pale greenish-ye well-indurated, medium- and coarse-grained sandstone with thin interstratifie of fine-grained, tuffaceous sandstone, siltstone and claystone. The Temecula A has been assigned an Irvigtonian I age based on a first occurrence of Tetramer (Woodburne, 1987) placing it at approximately 1.9 Ma (late Pliocene)			
					PLUTONIC ROCKS			
Q /	 	Q 60		Kgd	Granodiorite and hybrid granitic rocks undivided (mid-Cretaceous) — deeply weathered, medium- to coarse-grained, hornblende biotite grano Also includes a wide variety of hybrid granitic rocks. In addition some asser- include large proportions of schist and gneiss.			
e Gra	Monzogranite	Tonalite		Kt	Tonalite undivided (mid-Cretaceous) —Mostly massive, coarse-grained, lig hornblende biotite tonalite			
	Quartz Monzonite	Quartz Monzodiorite			METAMORPHIC ROCKS			

Monzonite Monzodiorite Classification of plutonic rock types (from IUGA, 1973, and *Streckeisen, 1973). A, alkali feldspar; P, plagioclase feldspar; Q, quartz.

*Streckeisen, A.L., 1973, Plutonic rocks--Classification and nomenclature recommended by the IUGA Subcommission on Systematics of Igneous Rocks: Geotimes, vol.18, pp.26-30.

INDEX MAP

	Vail Lake	Aguanga	Beauty Mt.	Bucksnort Mt.	Collins Valley	Clark Lake	Rabbit Pk.	Oasis
0,000-scale								
	Boucher Hill	Palomar Observatory	Borrego Springs	Hot Springs Mt.	Borrego Palm Canyon	Clark Lake	Fonts Point	Seventeen Palms
	Rodriquez Mt.	Mesa Grande	Warners Ranch	Ranchita	Tubb Canyon	Borrego Sink	Borrego Mt.	Shell Reef
30	San Pasqual	Ramona	Santa Ysabel	Julian	Earthquake Valley	Whale Peak	Harper Canyon	Borrego Mt. S.E.

PREVIOUS STUDIES REFERRED TO

metagranitic rocks.

Mann, J.F., 1955, Geology of a portion of the Elsinore Fault Zone California: Division of Mines and Geology Special Report 43, p. 22, map scale 1:62,500.

Weber F.H., Jr., 1963, Geology and mineral resources of San Diego County, California: California Division of Mines and Geology, County Report 3, Plate 1, scale 1;120,000.

Weber, F.H., Jr. and Rogers, T.H., 1964, Reconnaissance mapping for the State Geologic Map, Aguanga 7.5' quadrangle: California Division of Mines and Geology, unpublished map, scale 1:24,000.

Woodburne, M.O., 1987, editor, Cenozoic mammals of north America: Geochronology and biostratigraphy: Berkeley and Los Angeles Univ. California Press, 336 p.



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—Fluvial olidated, nd clay-

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ellow, ed beds Arkose erx

-Mostly odiorite. mblages

ight gray,

Metavolcanic and metasedimentary rocks undivided (Cretaceous and Jurassic)-Mostly Mesozoic schist, gneiss and quartzite. Commonly mixed with