



**EXPLANATION**

**SEDIMENTARY ROCKS**

<b>Quaternary</b>	<b>Qal</b>	Alluvium Gravel, sand, silt
	<b>Qm</b>	Modern dune sand Actively drifting sand
	<b>Qd</b>	Intermediate dune sand Dune sand with or less marked by vegetation
	<b>Qo</b>	Old dune sand Dune sand anchored by vegetation
	<b>Qt</b>	Terrace deposits younger than Orcutt sand Sand, gravel, rubble on stream and marine terraces; includes facies which depend on marine terraces of other ages include Orcutt sand
	<b>Oo</b>	Slightly deflated terrace deposits, sand, gravel
	<b>Tr Js</b>	Paso Robles formation Sand, gravel, clay, limestone, ls
<b>Careage sandstone</b>	<b>Tca</b>	Gracious coarse-grained member Coarse-grained sandstone and sand; conglomerate, gravel
	<b>Tcc</b>	Cebada fine-grained member Fine-grained sandstone and sand; conglomerate lens sandstone in Casmalia Hills
	<b>Tt</b>	Foxen mudstone Mudstone, siltstone, fine-grained sandstone; limestone in Casmalia Hills

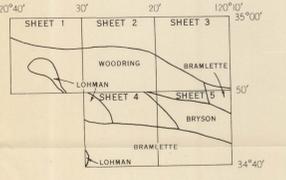
<b>Upper Miocene to middle Pliocene</b>	<b>Upper Miocene to middle Pliocene</b>	<b>Upper Miocene to middle Pliocene</b>	<b>Upper Miocene to middle Pliocene</b>
<b>Sisquoc formation</b>	<b>Purisima Hills</b>	<b>GATO RIDGE AND GRACIOSA RIDGE</b>	<b>CASMALIA HILLS</b>
<b>Ts</b>	<b>Tm</b>	<b>Ts</b>	<b>Ts Tsd</b>
Diatomaceous strata Diatomaceous siltstone, sandstone	Sisquoc formation Diatomaceous mudstone, clayey mudstone, light-colored diatomaceous strata, ls	Sisquoc formation Diatomaceous mudstone, clayey mudstone, light-colored diatomaceous strata, ls	Diatomaceous strata Diatomaceous mudstone, clayey mudstone, light-colored diatomaceous strata, ls
<b>Tst</b>	<b>Tm</b>	<b>Tm</b>	<b>Tsd</b>
Tinaque sandstone member Sandstone, siltstone	<b>Upper member</b> Porcellanous shale, laminated siltstone and diatomaceous shale, Tm	<b>Middle member</b> Chert, cherty shale, porcellanous shale	<b>Todos Santos</b> claystone member Claystone, porcellanous shale, thin zones of porcellanous shale
<b>Tm</b>	<b>Lower member</b> Phagolite shale, porcellanous shale, limestone	<b>Point Sal formation</b> Mudstone, siltstone, thin-bedded sandstone	<b>Undifferentiated Lense formation</b> Siltstone and gravelly conglomerate, sandstone, siltstone and mudstone, ls, ls
<b>Tp</b>	<b>Upper member</b> Orcutt sandstone, siltstone, and sandstone member	<b>Lower member</b> Siltstone, sandstone, conglomerate, ls, ls	<b>Knockville formation</b> Shale, thin-bedded sandstone, conglomerate
<b>Tp</b>	<b>Lower member</b> Siltstone, sandstone, conglomerate, ls, ls	<b>Knockville formation</b> Shale, thin-bedded sandstone, conglomerate	

**IGNEOUS ROCKS**

<b>Diabase</b>	<b>Agpate andesite</b>
<b>Jf</b>	<b>Jf</b>

Undifferentiated igneous rocks of Franciscan formation  
Mostly altered basalt and gabbro; minor areas of granite and syenite

—	Boundary or outcrop determined by exposures of mapped bed	+	Abandoned gas well
- - -	Boundary or outcrop determined by scattered exposures and float	●	Oil well producing from deep zone
· · ·	Boundaries or outcrop inferred	★	Knockville formation in Santa Maria Valley field, Lense formation in Point Sal formation in Casmalia Hills
— · —	Boundary or outcrop doubtful	◆	Shut-in gas well formerly producing from Knockville formation in Santa Maria Valley field
— x —	Trace of exposed fault and dip of fault plane; downthrown side marked	◇	Uncompleted idle well. Deep zone tested but not productive. Deep zones same as above
- - - x - - -	Trace of imperfectly exposed fault	◇	Dry hole. Deep zone tested, but not productive. Deep zones same as above
- - - x - - -	Trace of inferred fault	◇	Producing oil well. Deep zone tested but not productive. Deep zones same as above
- - - x - - -	Trace of doubtful fault		
— x —	Axis of anticline and direction of plunge, dashed where doubtful		
— x —	Axis of overturned anticline		
— x —	Axis of syncline and direction of plunge		
— x —	Strike and dip of beds		
— x —	Strike and dip of overturned beds		
— x —	Strike of vertical beds		
— x —	Approximate dip of beds, strike undetermined		
— x —	Horizontal beds		
— x —	Fossil locality		
— x —	Undrained depression		
— x —	Drilling well (Jan. 15, 1947)		
— x —	Uncompleted idle well		
— x —	Dry hole		
— x —	Water well in oil field		
— x —	Producing oil well		
— x —	Shut-in oil well		
— x —	Abandoned oil well		
— x —	Producing gas well		
— x —	Shut-in gas well		



Base from airplane photograph mosaic sheets prepared by Fairchild Aerial Surveys

GEOLOGIC MAP OF SANTA MARIA DISTRICT, SANTA BARBARA COUNTY, CALIFORNIA

Geology by W. P. Woodring, M. N. Bramlette, R. E. Lohman, and R. P. Bryson. Surveyed in 1938-40

