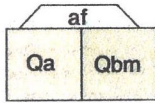


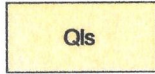
RICHMOND MAP (DF-147)

LEGEND

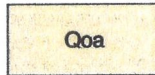


SURFICIAL DEPOSITS

af Manmade artificial fill for dam
Qa Alluvial gravel, sand and clay of valley areas
Qbm Bay mud



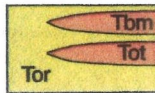
LANDSLIDE RUBBLE



OLDER SURFICIAL SEDIMENTS

Qoa Dissected older alluvial gravel and sand, undeformed; age late Pleistocene

— UNCONFORMITY —

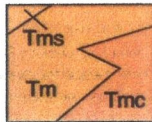


ORINDA FORMATION

(of Lawson, 1914) Terrestrial valley sediments, weakly to moderately lithified; age possibly latest Miocene

Tor Terrestrial pebble conglomerate, sandstone and claystone, interbedded, gray to greenish gray; includes volcanic rocks in lower part, as follows:
Tbm Moraga Basalt (of Lawson, 1914), black, fine grained, massive, locally vesicular
Tot Tuff-breccia, gray-white, rhyolitic, massive to vaguely bedded

— UNCONFORMITY —



MONTEREY FORMATION & SANDSTONE

Marine clastic and biogenic, lithified, only lithologic facies units not named units; age late to middle Miocene

Tmc Clay shale and siltstone, gray, massive to vaguely bedded, includes fine grained silty sandstone
Tm Siliceous shale; including units locally called Rodeo, Tice and Claremont shale (Lawson, 1914); white weathered, thin bedded, porcellaneous to cherty and brittle
Tms Sandstone, light gray, fine to medium grained, arkosic as thin lenses

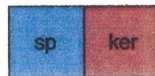
— UNCONFORMITY —



PANOCHÉ FORMATION

Marine clastic, lithified; age late Cretaceous

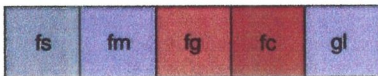
Kp Clay shale or claystone, gray, micaceous, includes few thin sandstone layers, exposed only at SE corner



COAST RANGE OPHIOLITE COMPLEX

Igneous complex intrusive into Franciscan Assemblage; age Jurassic to Cretaceous

sp Serpentinite, hydrothermally metamorphosed from ultramafic igneous rocks, such as dunite, hydrous magnesium silicate, massive, amorphous, blue-green gray, much fractured, sheared, slickensided
Ker Volcanic rocks, mostly keratophyre andesitic rock, brown, massive, aphanitic, much altered, includes basaltic rocks in Hayward Fault



FRANCISCAN ASSEMBLAGE

Submetamorphosed eugeosynclinal marine sedimentary and mafic igneous rocks; age Jurassic and Cretaceous

fs Graywacke sandstone, gray, massive, fine grained, hard
fm Melange (mixture) of Franciscan rock fragments in matrix of pervasively sheared dark claystone and graywacke
fg Greenstone (metabasalt) (may be in part of the Coast Range ophiolite complex)
fc Chert or metachert, thin bedded, varicolored red and green, brittle, contorted
gl Glaucophane blue-schist

