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## LEGEND

PLATE 4.

QUATERNARY

- Qls — Landslide deposits
- Qal — Alluvial, lacustrine and fluviatile deposits

TERTIARY

- Hydrothermal alteration (in rock other than serpentine)
- sc — Silica-carbonate rock (hydrothermally altered serpentine)
- Qq — Quartz veins
- Qob — Quartz bearing olivine basalt flows and dikes

Pliocene

Sonoma Volcanics (not in stratigraphic sequence)

- Tswt — Welded ash flow tuff of rhyolitic composition
- Tslt — Breccia, tuff breccia, minor agglomerate and tuff of andesitic composition
- Tst — Pumicitic ash flow tuff, welded and non-welded, of rhyolitic composition
- Tsft — Tuff, similar to Tst, but including thin basic lava flows
- Tsr — Rhyolitic lava flows and non-welded tuff
- Tsag — Agglomerate, with minor flow breccia, of andesitic composition
- Tsa — Andesitic to basaltic lava flows
- Tsai — Andesitic and dacitic plugs and dikes
- Tsri — Rhyolitic plugs and dikes

JURASSIC-CRETACEOUS

Franciscan Formation

- KJfu — Upper sedimentary unit: muscovite bearing greywacke
- KJfl — Lower sedimentary unit: greywacke, mafic volcanic rocks, greenstone, chert, minor schists.
- s — Serpentine and related ultramafic rocks
- d — Diabase, diabase breccia
- g — Gabbro, diorite and related coarse grained mafic rocks

Great Valley Sequence

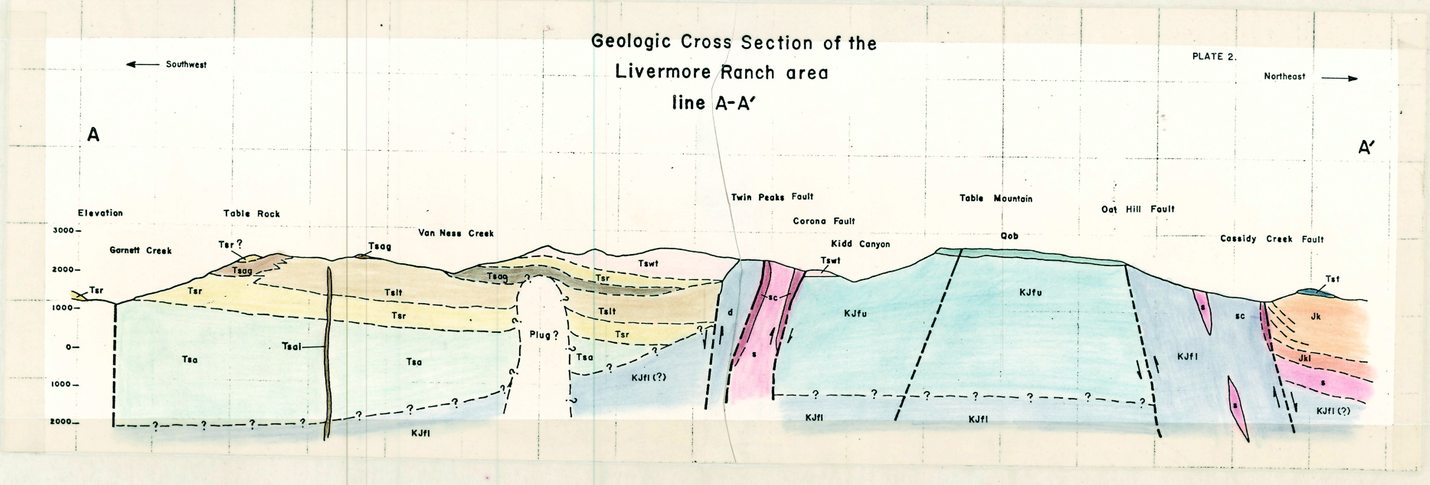
- Jk — Knoxville Formation
- Jkl — Lower, greenstone bearing portion of Knoxville Formation

### KEY

- Geologic contact: dashed where approximate; queried where questionable
- Fault: dashed where approximate; dotted where concealed
- 30 — Strike and dip of bedding or flow banding
- 70 — Strike and dip of fault, vein or dike
- Boundary of study area
- Boundary of Livermore Ranch
- Line of geologic cross-section

## Geologic Cross Section of the Livermore Ranch area line A-A′

PLATE 2.




## Geologic Cross Section of the Livermore Ranch area line B-B′

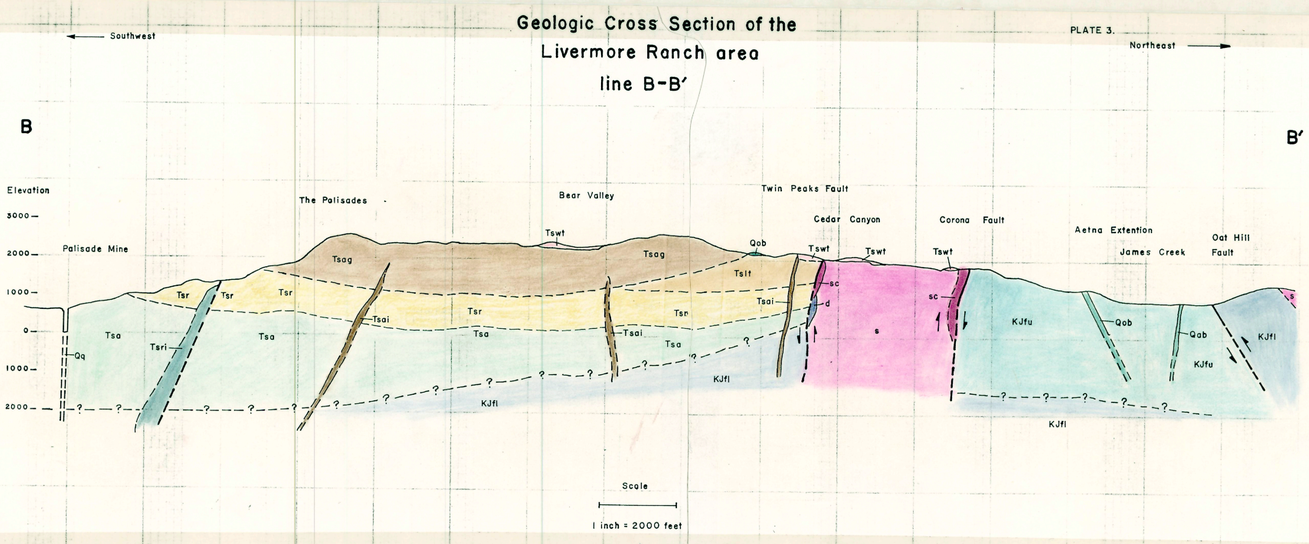



PLATE 3.