

**EXPLANATION**

**DESCRIPTION OF MAP UNITS**

- Qa Alluvium and river gravel (Quaternary)
- Tb Bouse Formation (Pliocene and Miocene)
- Tf Fanglomerate (Miocene) -- Includes fanglomerate of Osborn Wash
- Tba Basalt (Miocene)

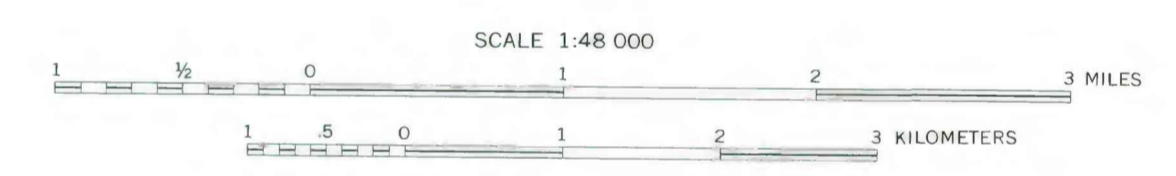
**AUTOCHTHONOUS UNITS BELOW WHIPPLE MOUNTAINS DETACHMENT FAULT**

- Tgb Gabbro (Tertiary)
- mr Mylonitic rocks (Tertiary, Cretaceous, and Proterozoic)
- gnd Gneiss (Proterozoic) with subordinate granitoid rocks (Tertiary, Cretaceous, and Proterozoic) and dikes (Tertiary)
- Pggr Gneiss and granitoid rocks (Proterozoic)

**ALLOCHTHONOUS UNITS ABOVE WHIPPLE MOUNTAINS DETACHMENT FAULT**

- Ts Sedimentary rocks (Miocene and Oligocene?)
- Tv Volcanic rocks (Miocene and Oligocene?)
- Tvs Volcanic and sedimentary rocks (Miocene and Oligocene?)
- Ti Intrusive rocks (Miocene and Oligocene?)
- Kg Granite and granodiorite (Cretaceous)
- Mz/M Metasedimentary rocks (Mesozoic and Paleozoic)
- gnd Gneiss (Proterozoic) with subordinate granitoid rocks (Proterozoic) and dikes (Tertiary) -- Same as unit gnd in autochthonous units block (see above) except that Cretaceous and Tertiary granitoid rocks may be absent
- Pggr Gneiss and granitoid rocks (Proterozoic)

- Contact
- - - Fault -- Dashed where inferred; dotted where concealed. Hachures indicate upper plate of detachment fault
- ↔ Anticline -- Showing plunge
- ↔ Synform -- Showing plunge
- Sample locality and number for stream sediment and panned concentrate
- <sup>95R</sup> Sample locality for rock and soil
- X<sup>18-1R</sup> Rock
- X<sup>18-1S</sup> Soil



**MAP SHOWING GEOLOGY AND LOCATIONS FOR STREAM SEDIMENT, PANNED CONCENTRATE, ROCK, AND SOIL SAMPLES  
IN THE WHIPPLE MOUNTAINS WILDERNESS STUDY AREA (CDCA-312) AND WHIPPLE MOUNTAINS ADDITION WILDERNESS STUDY AREA (AZ-050-010), SAN BERNARDINO COUNTY, CALIFORNIA**