

# Quaternary Fault and Fold Database of the United States

As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the [interactive fault map](#).

## Michelbach Tank faults (Class A) No. 978

Last Review Date: 1997-01-07

### Compiled in cooperation with the Arizona Geological Survey

*citation for this record:* Pearthree, P.A., compiler, 1997, Fault number 978, Michelbach Tank faults, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, <https://earthquakes.usgs.gov/hazards/qfaults>, accessed 12/14/2020 03:11 PM.

<b>Synopsis</b>	This north-trending system of faults and a narrow graben is in the northern part of the Pliocene-Quaternary San Francisco volcanic field. Faults cut Paleozoic bedrock and lower Pleistocene volcanic rocks, and a middle Pleistocene basalt flow is probably displaced by some faults of the system. There is no definitive evidence that the fault zone has been active in the late Quaternary.
<b>Name comments</b>	Mapped by Menges and Pearthree (1983 #2073), who grouped this fault zone with many others in the area in the SP fault set; this particular fault zone was named and differentiated from other faults in the area by Pearthree and others (1996 #2153). The geology of the area was mapped by Ulrich and Bailey (1987

	#2156).
<b>County(s) and State(s)</b>	COCONINO COUNTY, ARIZONA
<b>Physiographic province(s)</b>	COLORADO PLATEAUS
<b>Reliability of location</b>	Good Compiled at 1:250,000 scale.  <i>Comments:</i> Trace mapped at 1:50,000 scale; transferred to 1:250,000-scale topographic base map.
<b>Geologic setting</b>	This fault zone is one of many in the northern part of the Pliocene-Quaternary San Francisco volcanic field, on the erosion surface cut on Paleozoic rocks between the Mogollon Rim and the Little Colorado River. The Michelbach Tank faults cut Paleozoic bedrock and lower Pleistocene basalt; some of the faults in the zone do not offset a middle Pleistocene (480 ka) basalt flow, but other fault strands are mapped as cutting this flow.
<b>Length (km)</b>	13 km.
<b>Average strike</b>	N4°E
<b>Sense of movement</b>	Normal  <i>Comments:</i> Predominantly normal movement is inferred from topographic and regional relations.
<b>Dip Direction</b>	E; W
<b>Paleoseismology studies</b>	
<b>Geomorphic expression</b>	Faulting is expressed as a fairly high, east-facing escarpment formed on Paleozoic rocks and lower Pleistocene basalt. In the northern part of the system, faulting is expressed as a shallow (<15-m-deep), narrow (500-m-wide), linear trough bounded by scarps formed on Paleozoic bedrock. Middle Pleistocene basalt flowed down valleys that cross the fault system and partially filled the trough along central and southern part of the fault system.
<b>Age of faulted surficial deposits</b>	Paleozoic, early Pleistocene, middle Pleistocene

<b>Historic earthquake</b>	
<b>Most recent prehistoric deformation</b>	middle and late Quaternary (<750 ka) <i>Comments:</i> Lower Pleistocene volcanic rocks are faulted, and a middle Pleistocene basalt flow is probably displaced by some of the faults of the system.
<b>Recurrence interval</b>	
<b>Slip-rate category</b>	Less than 0.2 mm/yr <i>Comments:</i> Low slip rate inferred from minimal or no offset of a middle Pleistocene (480 ka) basalt flow.
<b>Date and Compiler(s)</b>	1997 Philip A. Pearthree, Arizona Geological Survey
<b>References</b>	#2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000.  #2153 Pearthree, P.A., Vincent, K.R., Brazier, R., and Hendricks, D.M., 1996, Plio-Quaternary faulting and seismic hazard in the Flagstaff area, northern Arizona: Arizona Geological Survey Bulletin 200, 40 p., 2 pls.  #2156 Ulrich, G.E., and Bailey, N.G., 1987, Geologic map of the SP Mountain part of the San Francisco volcanic field, north-central Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1956, 2 sheets, scale 1:50,000.

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