Jump to Navigation

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.

Lee Dam faults (Class A) No. 973

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 973, Lee Dam 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.**

Synopsis	This is a north-trending series of east- and west-dipping normal faults and a narrow graben in the northern part of the Pliocene-Quaternary San Francisco volcanic field. Faults cut Paleozoic bedrock and lower Pleistocene volcanic rocks. A middle Pleistocene basalt flow near the southern end of the fault zone is probably not faulted, so the fault zone has likely been inactive in the middle or late Quaternary.
Name comments	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 this area was mapped by Ulrich and Bailey (1987

	#2156).
County(s) and State(s)	COCONINO COUNTY, ARIZONA
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Trace mapped at 1:50,000 scale; transferred to 1:250,000-scale topographic base map.
Geologic setting	One of many fault zones in the northern part of the Plio-Quaternary San Francisco volcanic field, on the erosion surface cut onto Paleozoic rocks between the Mogollon Rim and the Grand Canyon. The Lee Dam faults cut Paleozoic bedrock and lower Pleistocene basalt.
Length (km)	7 km.
Average strike	N4°W
Sense of movement	Normal *Comments:* Predominantly normal movement is inferred from topographic and regional relations.
Dip Direction	W; E
Paleoseismology studies	
Geomorphic expression	Faulting is expressed as a series of fairly low, east- and west-facing scarps formed on Paleozoic rocks and lower Pleistocene basalt, and a moderately deep (40 m), narrow (<300 m), linear trough bounded by scarps formed on Paleozoic bedrock. Scarp slopes are fairly gentle along most of the fault.
Age of faulted surficial deposits	Paleozoic, early Pleistocene
Historic earthquake	
Most recent	undifferentiated Quaternary (<1.6 Ma)

prehistoric deformation	*Comments:* Lower Pleistocene volcanic rocks are faulted, but no displacement of a middle Pleistocene basalt flow or late Quaternary deposits has been documented.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No data exist to determine a slip rate, but the <0.2 mm/yr category is inferred on the basis of the lack of fault activity in the middle and late Quaternary.
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#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.