

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](#).

Whitlock Wash fault (Class A) No. 940

Last Review Date: 1996-01-03

Compiled in cooperation with the Arizona Geological Survey

citation for this record: Pearthree, P.A., compiler, 1996, Fault number 940, Whitlock Wash fault, 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 03:12 PM.

Synopsis	A series of north- to northwest-trending faults offset Pliocene basin-fill deposits on the east side of the northern San Pedro Valley, in southeastern Arizona. Quaternary fault activity is suspected based on the prominent escarpment formed on basin-fill deposits. However, a detailed map of the southern part of this fault zone shows no offset of lower to middle Quaternary deposits (Shenk, 1990 #2130), so Quaternary activity is uncertain.
Name comments	Mapped and named by Menges and Pearthree (1983 #2073); remapped by Pearthree and others (1988 #2125), but part of the fault was mapped in greater detail by Shenk (1990 #2130).
Country(s) and	

County(s) and State(s)	PINAL COUNTY, ARIZONA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. <i>Comments:</i> Trace mapped on 1:130,000-scale aerial photos; transferred to 1:250,000-scale topographic base map.
Geologic setting	This structure is located toward the eastern side of the northern San Pedro Valley, which is a fairly deep (1000 m) Cenozoic sedimentary basin. The sense of faulting is down to the west. The San Pedro Valley is a strongly defined, north-trending topographic feature. Faults displace upper basin-fill deposits that are of Pliocene age (Shenk, 1990 #2130).
Length (km)	23 km.
Average strike	N12°W
Sense of movement	Normal <i>Comments:</i> Based on natural fault exposures.
Dip	70° to 85° E <i>Comments:</i> Based on mapping by Shenk (1990 #2130).
Paleoseismology studies	
Geomorphic expression	Faulting has generated a high, but not very steep, escarpment on basin-fill deposits along this fault. No certain offset of Quaternary deposits has been documented, and detailed geologic mapping along of part of the fault by Shenk (1990 #2130) found no evidence for displacement of fairly old Quaternary alluvium.
Age of faulted surficial deposits	Pliocene
Historic earthquake	

Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> There is a good chance that there has not been any Quaternary activity on this structure.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> No slip rate data have been reported, but the fault zone likely has a low slip rate owing to a lack of clear late Quaternary offset.
Date and Compiler(s)	1996 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. #2125 Pearthree, P.A., McKittrick, M.A., Jackson, G.A., and Demsey, K.A., 1988, Geologic map of Quaternary and upper Tertiary deposits, Tucson 1° x 2° quadrangle, Arizona: Arizona Geological Survey Open-File Report 88-21, scale 1:250,000. #2130 Shenk, J.D., 1990, Economic geology of the White Cliffs diatomite deposit, Mammoth, Arizona: Tucson, University of Arizona, unpublished M.S. thesis, thesis, 157 p.

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