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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.

West Indio Mountains fault (Class A) No. 915

Last Review Date: 1993-11-30

Compiled in cooperation with the Texas Bureau of Economic Geology

citation for this record: **Collins, E., compiler, 1993, Fault number 915, West Indio Mountains 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 03:13 PM.**

Synopsis	Fault consists of a series of scarps along the western base of the Indio Mountains. Reconnaissance studies of scarp morphology and mapping of faulted Quaternary deposits are the sources of data. Trench investigations have not been conducted.
Name comments	Named by Collins and Raney (1993 #852) for proximity to western base of the Indio Mountains. The fault extends from about 10 km south-southwest of Eagle Peak, south to the Bramlett Ranch (1 km north of the International Boundary); the fault probably continues southward several kilometers or more into Mexico beneath alluvium of the Rio Grande.

County(s) and State(s)	HUDSPETH COUNTY, TEXAS CHIHUAHUA, MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Location based on 1:250,000-scale map compiled from aerial photographs and 1:24,000-scale maps of Collins and Raney (1993 #852); some fault strands were mapped by Underwood (1963 #862). The southern extension of the fault into Mexico is based on Villegas and others (2017 #8388).
Geologic setting	Down-to-west and southwest range-front fault bounding the west side of the Indio Mountains and east side of Red Light Draw (Collins and Raney, 1993 #852; 1994 #853).
Length (km)	22 km.
Average strike	N24°W
Sense of movement	Normal *Comments:* Not studied in detail; sense of movement inferred from topography and displacement of deposits.
Dip	70° SW *Comments:* Dip measured in an arroyo exposure (located 6 km north of Bramlett Ranch) that exposes faulted Pliocene-Pleistocene sediment (Collins and Raney, 1993 #852).
Paleoseismology studies	
Geomorphic expression	Much of fault''s surface expression has been eroded or buried. Scarp heights are commonly 1–3 m. A scarp along one fault strand has a maximum slope angle of 11°–14° (Collins and Raney, 1993 #852).
Age of faulted surficial deposits	Quaternary alluvium and upper Tertiary basin-fill deposits (Collins and Raney, 1993 #852). The youngest deposits known to be faulted deposits are upper Pleistocene.

Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Approximate age of youngest faulted deposits was estimated from development of calcic soils. Fault may have ruptured during the Holocene although detail studies to verify displacement of Holocene deposits have not been conducted (Collins and Raney, 1993 #852).
Recurrence interval	40–80 k.y. (<500 ka) *Comments:* Collins and Raney (1993 #852) estimated that the average recurrence interval for large surface ruptures since middle Pleistocene may be as much as 40–80 k.y. These values are based on (a) their estimate of the number of large-displacement (1- to 2-m) surface ruptures since middle Pleistocene time, (b) the assumption that faulted middle Pleistocene deposits are approximately 250–500 ka, and (c) approximately 9 m of throw measured on middle Pleistocene deposits.
Slip-rate category	Less than 0.2 mm/yr *Comments:* Average slip rate since middle Pleistocene is less than 0.2 mm/yr on the basis of 9 m of throw for middle Pleistocene deposits (Collins and Raney, 1993 #852).
Date and Compiler(s)	1993 E.W. Collins, Bureau of Economic Geology, The University of Texas at Austin
References	#852 Collins, E.W., and Raney, J.A., 1993, Late Cenozoic faults of the region surrounding the Eagle Flat study area, northwestern trans-Pecos Texas: Technical report to Texas Low-Level Radioactive Waste Disposal Authority, under Contract IAC(92-93)-0910, 74 p. #853 Collins, E.W., and Raney, J.A., 1994, Impact of late Cenozoic extension on Laramide overthrust belt and Diablo Platform margins, northwestern trans-Pecos Texas, *in* Ahlen, J., Peterson, J., and Bowsher, A.L., eds., Geologic activities in the 90s: New Mexico Bureau of Mines and Mineral Resources Bulletin 150, p. 71-81. #862 Underwood, J.R., Jr., 1963, Geology of Eagle Mountains

	and vicinity, Hudspeth County, Texas: The University of Texas at Austin, [Texas] Bureau of Economic Geology Geologic quadrangle Map 26, 32 p. pamphlet, 1 sheet, scale 1:48,000. #8388 Villegas, G.C., Mendoza, E., and Ferrari, L., 2017, Mexico Quaternary fault database—Base de datos de fallas cuaternarias de México: Terra Digitalis, v. 1, p. 1–9.