

# 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](#).

## Sabinal fault (Class A) No. 2116

Last Review Date: 2016-03-28

Compiled in cooperation with the New Mexico  
Bureau of Geology & Mineral Resources

*citation for this record:* Personius, S.F., and Jochems, A.P., compilers, 2016, Fault number 2116, Sabinal 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 02:21 PM.

<b>Synopsis</b>	The Sabinal fault, one of many intrabasin faults in the central Albuquerque-Belen basin, offsets the early Pleistocene (?) Llano de Albuquerque surface 5–27 m. The Sabinal fault is best exposed near its southern end where it cuts well developed calcic soils on the east margin of the Llano de Albuquerque surface and underlying sediment of the Sierra Ladrones Formation. No detailed studies have been conducted to determine the timing of the fault.
<b>Name comments</b>	The Sabinal fault was first recognized by Denny (1941 #1293) and later remapped by Kelley (1977 #1106), Machette (1982 #1401), and Machette and McGimsey (1983 #1024); the latter

	<p>named the fault for exposures near the Sabinal triangulation station located in the Abeytas 7.5 minute quadrangle. The Sabinal fault extends from the latitude of Sabinal to the latitude of Belen, along the western edge of the Llano de Albuquerque, and is one of numerous faults that offset the Llano de Albuquerque in the central Albuquerque-Belen basin.</p> <p><b>Fault ID:</b> Fault no. 7 of Machette (1982 #1401), fault no. 6 of Machette and McGimsey (1983 #1024).</p>
<b>County(s) and State(s)</b>	SOCORRO COUNTY, NEW MEXICO VALENCIA COUNTY, NEW MEXICO
<b>Physiographic province(s)</b>	BASIN AND RANGE
<b>Reliability of location</b>	<p>Good Compiled at 1:24,000 scale.</p> <p><i>Comments:</i> Fault traces compiled from 1:24,000-scale maps of Love (1999 #7456), Rawling (2003 #7458), and McCraw and others (2006 #7255). Originally compiled from Machette and McGimsey (1983 #1024) at 1:250,000 scale on topographic base map.</p>
<b>Geologic setting</b>	The Sabinal fault is one of numerous intrabasin faults that offset the Llano de Albuquerque in the central part of the Albuquerque-Belen basin.
<b>Length (km)</b>	20 km.
<b>Average strike</b>	N10°W
<b>Sense of movement</b>	Normal
<b>Dip Direction</b>	W
<b>Paleoseismology studies</b>	
<b>Geomorphic expression</b>	The Sabinal fault is well expressed as a large fault scarp (5–27m) on the Llano de Albuquerque (Machette and McGimsey, 1983 #1024). Near its southern end, the fault becomes a slightly faulted gentle monocline (McCraw and others, 2006 #7255). Its expression is commonly masked by a cover of late Pleistocene to Holocene eolian sand (Love, 1999 #7456).

<b>Age of faulted surficial deposits</b>	The Sabinal fault offsets well developed calcic soils that underlie the early Pleistocene (?) Llano de Albuquerque. These soils are relict features that have formed though a large part of the Quaternary.
<b>Historic earthquake</b>	
<b>Most recent prehistoric deformation</b>	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> No deposits younger than the early Pleistocene (?) Llano de Albuquerque have been shown to be offset by the Sabinal fault, but offsets up to 27 m measured by Machette and McGimsey (1983 #1024) indicate a long recurrent history of movement.
<b>Recurrence interval</b>	
<b>Slip-rate category</b>	Less than 0.2 mm/yr <i>Comments:</i> Low slip-rate category assigned based on offsets of 5–27 m of the early Pleistocene (approximately 1 Ma) Llano de Albuquerque (Machette and McGimsey, 1983 #1024).
<b>Date and Compiler(s)</b>	2016 Stephen F. Personius, U.S. Geological Survey Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
<b>References</b>	#1293 Denny, C.S., 1941, Quaternary geology of the San Acacia area, New Mexico: <i>Journal of Geology</i> , v. 49, p. 225-260.  #1106 Kelley, V.C., 1977, Geology of Albuquerque basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources Memoir 33, 60 p., 2 pls.  #7456 Love, D.W., 1999, Geologic map of the Veguita 7.5-minute quadrangle, Valencia and Socorro Counties, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Geologic Map 28, scale 1:24,000.  #1401 Machette, M.N., 1982, Quaternary and Pliocene faults in the La Jencia and southern part of the Albuquerque-Belen basins, New Mexico—Evidence of fault history from fault-scarp morphology and Quaternary geology, <i>in</i> Grambling, J.A., and Wells, S.G., eds., <i>Albuquerque Country II: New Mexico</i>

Geological Society, 33rd Field Conference, November 4-6, 1982, Guidebook, p. 161-169.

#1024 Machette, M.N., and McGimsey, R.G., 1983, Map of Quaternary and Pliocene faults in the Socorro and western part of the Fort Sumner 1° x 2° quadrangles, central New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1465-A, 12 p. pamphlet, 1 sheet, scale 1:250,000.

#7255 McCraw, D.J., Love, D.W., and Connell, S.D., 2006, Geologic map of the Abeytas quadrangle, Socorro County, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Geologic Map 121, scale 1:24,000.

#7458 Rawling, G.C., 2003, Geologic map of the Belen 7.5-minute quadrangle, Valencia County, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Geologic Map 80, scale 1:24,000.

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