

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](#).

unnamed faults near Mound Springs (Class A) No. 1990

Last Review Date: 2016-09-22

citation for this record: Jochems, A.P., compiler, 2016, Fault number 1990, unnamed faults near Mound Springs, 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 02:25 PM.

Synopsis	These unnamed faults form small to moderate scarps along the western margin of the northern Tularosa basin. There, they expose Pennsylvanian and Lower Permian strata in their footwalls and cut middle to upper Pleistocene alluvial fan deposits. Relatively subdued scarps compared to other faults in the Tularosa basin suggest that these faults have not ruptured during the Holocene.
Name comments	Named by the compiler for their location near Mound Springs, an area of the northern Tularosa basin with abundant gypsum spring mounds. (Love and others, 2007 #7566; Love and others, 2014 #7567).
County(s) and State(s)	LINCOLN COUNTY, NEW MEXICO
Physiographic	

Physiographic province(s)	BASIN AND RANGE
Reliability of location	<p>Good Compiled at 1:24,000 scale.</p> <p><i>Comments:</i> Originally mapped at 1:24,000 scale on the Mound Springs 7.5-minute quadrangle (Love and others, 2007 #7566). Several short strands to the north in the Mockingbird Gap SE quadrangle were added by the compiler using stereogrammetric analysis. The faults are not shown on the 1:380,160-scale map of Dane and Bachman (1961 #7561).</p>
Geologic setting	<p>These mostly north- to northeast-trending faults form the eastern margin of the southernmost Oscura Mountains and the western margin of the Tularosa basin, which locally narrows from about 26 to about 12 km wide. They form a right-stepping pattern in relation to the northern section of the San Andres Mountains fault [2053a]. Pennsylvanian and Lower Permian strata are exposed in the footwalls of the faults, the main strand of which could accommodate up to 2 km of basin-fill below younger Quaternary deposits (D. Love, personal communication, 2016).</p>
Length (km)	7 km.
Average strike	N22°E
Sense of movement	Normal
Dip Direction	E; SE; S
Paleoseismology studies	
Geomorphic expression	<p>These faults form small to moderate (2- to 11-m-high) scarps on landforms underlain by unconsolidated middle to upper Pleistocene alluvial fan deposits. Two of the larger strands are easily recognized where they have ruptured the surface near the contact between Pleistocene fan deposits and Paleozoic strata (Love and others, 2007 #7566).</p>
Age of faulted surficial deposits	<p>Love and others (2007 #7566) mapped these faults as forming small to moderate scarps on units Qp_{ih}, Qp_{il}, and Qp_i. These units are described as high, low, and intermediate piedmont and alluvial deposits, respectively, that range in age from Holocene to middle Pleistocene. The higher and intermediate positions of</p>

	landforms cut by the scarps suggest that they are underlain by middle to upper Pleistocene rather than Holocene deposits.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) <i>Comments:</i> These faults form small to moderate scarps on deposits described as Holocene to middle Pleistocene in age (Love and others, 2007 #7566). Relatively subdued scarps compared to other faults in the Tularosa basin suggest that some of the faults have ruptured during the late Pleistocene but not Holocene.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> The slip rate category is inferred from 2- to 11-m-high scarps on middle to late Pleistocene landforms. The scarps are similar in appearance to those of the northern section of the San Andres Mountains fault [2053a].
Date and Compiler(s)	2016 Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#7561 Dane, C.H., and Bachman, G.O., 1961, Preliminary geologic map of the southwestern part of New Mexico: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-344, scale 1:380,160. #7566 Love, D.W., Allen, B., and Myers, R., 2007, Geologic map of the Mound Springs quadrangle, Lincoln, Sierra, Socorro, and Otero Counties, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Geologic Map 163, scale 1:24,000. #7567 Love, D.W., Allen, B., and Myers, R., 2014, Geomorphology of the northern Tularosa Basin, south central New Mexico, with particular attention to uncommon surficial features, <i>in</i> Rawling, G., McLemore, V.T., Timmons, S., and Dunbar, N., eds., Geology of the Sacramento Mountains region: New Mexico Geological Society, 65th Field Conference, September 24–27, 2014, Guidebook, p. 143–156.

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