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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.

Camel Mountain fault (Class A) No. 2073

Last Review Date: 2016-01-05

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

citation for this record: **Machette, M.N., and Jochems, A.P., compilers, 2016, Fault number 2073, Camel Mountain 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 02:22 PM.**

Synopsis	Little is known about this Quaternary fault except that it offsets Pliocene-Quaternary sediment of the Camp Rice Formation in southern New Mexico and northern Mexico. An escarpment associated with the fault was the subject of a 1969 field trip stop in Chihuahua, Mexico. Although the escarpment was considered to be a tectonic feature, it appears to have been partly formed by or at least accentuated by wave action along the shores of a late Pleistocene lake. No detailed studies or mapping have been performed.
Name comments	This fault is named for Camel Mountain, (a small peak east of the fault) on the Luna/Doña Ana County line, just north of the

	International Boundary with Mexico. The fault was first named in a field-trip guidebook (Anonymous, 1969 #1016; Reeves, 1969 #1017) although it was in reference to the southeastward trace of the fault [MX-93] in Chihuahua, Mexico. The fault extends about 30 km across a broad unnamed basin floor in southern New Mexico; Reeves (1969 #1017) extended the escarpment another 150 km southeastward into Chihuahua, Mexico. However, no indication was made as to which parts of the feature are of tectonic or lacustrine origin, or both. The southern extent of Reeve's trace is about 15 km north of Villa Ahumada, Mexico.
County(s) and State(s)	LUNA COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:125,000 scale. *Comments:* Generalized trace of the fault in New Mexico is from 1:125,000-scale map of Seager (1995 #975) Although Reeves (1969 #1017) extended it another 150 km southeastward into Chihuahua, Mexico, this trace is generalized and shown at a rather small scale.
Geologic setting	This south- to southeast-striking fault forms a gently uplifted bench that is underlain by basin-floor deposits of the Camp Rice Formation, which is largely undifferentiated and of Quaternary and Pliocene age in New Mexico. The entire trace of the fault is mapped as concealed beneath post-Camp Rice Formation sediment, most of which is probably of latest Pleistocene or Holocene age (Seager, 1995 #975). Well-log data indicate that the structural elevation of Precambrian rocks differs by approximately 670 m on either side of the fault (Seager, 1989 #7345).
Length (km)	47 km.
Average strike	N13°W
Sense of movement	Normal *Comments:* The fault is shown as a high-angle structure on cross sections of Seager (1989 #7345, 1995 #975).

Dip Direction	W
Paleoseismology studies	
Geomorphic expression	No information is available about the surficial expression of the fault in New Mexico where it is mapped as everywhere concealed beneath post-Camp Rice Formation sediment of latest Pleistocene or Holocene age (Seager, 1995 #975). However, down-to-the-west movement on the fault has produced a 30-m-high fault-line escarpment that bounds the western edge of a widespread bench (piedmont). The height of this escarpment probably represents the minimum amount of displacement in sediment of the Camp Rice Formation. In Chihuahua, Mexico, the fault forms a prominent escarpment that is considered to be a polygenetic feature (Reeves, 1969 #1017). At Stop 2 of Day 1 of a 1969 field trip (Anonymous, 1969 #1016), the escarpment was reported to be about 45 m high and it bounds the eastern edge of Laguna Tildio, a modern barrial (playa). Reeves (1969 #1017) argued that the Camel Mountain escarpment is in part due to Pleistocene faulting, the scarp having been accentuated by wave erosion at the La Mota lake level of pluvial Lake Palomas (1200 m above sea level). If this is true, then scarp morphology studies would be relatively meaningless in terms of the recency of movement along the fault.
Age of faulted surficial deposits	The fault offsets basin-floor deposits of the Camp Rice Formation (undifferentiated), which is Quaternary and Pliocene age according to mapping of Seager (1995 #975) to the north. However, deposits of middle or late Quaternary age may be offset in the shallow subsurface.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:*
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred from the relatively small

	apparent offset associated with the Quaternary (?) surface of the Camp Rice Formation and from rates of more conspicuous Quaternary faults in the region. Seager (1995 #975) states that about 30 m of Camp Rice sediment is exposed along the escarpment.
Date and Compiler(s)	2016 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#1016 Anonymous, 1969, First day road log from Ciudad Juarez to Nuevo Casas Grandes, via Sierra de Juarez, Sierra Boca Grande, Ascencion, and Janos, *in* Cordoba, D.A., Wengerd, S.A., and Shomaker, J., eds., Guidebook of the border region: New Mexico Geological Society, 20th Field Conference, October 23-25, 1969, Guidebook, p. 1-16. #1017 Reeves, C.C., Jr., 1969, Pluvial Lake Palomas northwestern Chihuahua, Mexico, *in* Cordoba, D.A., Wengerd, S.A., and Shomaker, J., eds., Guidebook of the border region: New Mexico Geological Society, 20th Field Conference, October 23-25, 1969, Guidebook, p. 143-154. #7345 Seager, W.R., 1989, Geology beneath and around the West Potrillo basalts, Doña Ana and Luna Counties, New Mexico: New Mexico Geology, v. 11, no. 3, p. 53–59. #975 Seager, W.R., 1995, Geology of southwest quarter of Las Cruces and northwest El Paso 1° x 2° sheets, New Mexico: New Mexico Bureau of Mines and Mineral Resources Geologic Map 60, 5 sheets, scale 1:125,000.