

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](#).

Arroyo Cuervo fault (Class B) No. 2139

Last Review Date: 2016-02-12

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

citation for this record: Jochems, A.P., and Machette, M.N., compilers, 2016, Fault number 2139, Arroyo Cuervo 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.

Synopsis	This down-to-the-southwest fault forms scarps (of unknown height) on the fluvial deposits of the Camp Rice Formation approximately 80 m below their construction surface. The fault juxtaposes fluvial deposits against Miocene syntectonic basin-fill deposits of the Rio Grande rift. No detailed studies of the scarps have been made.
Name comments	This unnamed northwest-trending fault is shown by Seager and others (1982 #626) and Seager (2010 #1260). It is parallel to but west of the western margin of the Rio Grande valley. The middle of the fault is located about 6 km west of Hatch, New Mexico.
Country(s) and	

County(s) and State(s)	DOÑA ANA COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. <i>Comments:</i> Digitized from 1:24,000-scale map of Seager (2010 #1260) combined with accurate placement using photogrammetric methods.
Geologic setting	This down-to-the-southwest fault juxtaposes upper Pliocene to early Quaternary fluvial deposits of the Camp Rice Formation against Miocene syntectonic basin-fill deposits of the Rio Grande rift. Towards its north end, its surface trace is entirely with early Quaternary fluvial deposits.
Length (km)	5 km.
Average strike	N58°W
Sense of movement	Normal
Dip Direction	SW <i>Comments:</i> The fault is shown as a high-angle structure on cross section B of Seager (2010 #1260). However, no specific dip values are reported
Paleoseismology studies	
Geomorphic expression	This down-to-the-southwest fault forms scarps approximately 80 m below the constructional La Mesa surface formed by fluvial (river) deposits of the Camp Rice Formation. No detailed studies of the scarps have been made although they appear to be of moderate (<10 m) to low height (several meters) as revealed from 1:24,000-scale topographic maps and on aerial photographs.
Age of faulted surficial deposits	The fault deforms deposits approximately 80 m below the constructional La Mesa surface formed by fluvial (river) deposits of the Camp Rice Formation. Mack and others (1993 #1020) have shown that, along the Rio Grande, this surface stabilized between 700–900 ka, and extrapolation of their nearby Hatch Siphon

	<p>magnetostratigraphic section implies that the deformed sediments predate the Mammoth subchron (3.23–3.33 Ma). However, the fault scarps, though degraded, can be identified in aerial photographs, and therefore might be Pleistocene.</p>
Historic earthquake	
Most recent prehistoric deformation	<p>undifferentiated Quaternary (<1.6 Ma)</p> <p><i>Comments:</i> Based on projection of deformed deposits to Hatch Siphon magnetostratigraphic section of Mack and others (1993 #1020). It is possible that the fault has ruptured in the Quaternary because scarps appear identifiable, though degraded, on aerial photographs.</p>
Recurrence interval	
Slip-rate category	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> Although no scarp heights or times of faulting have been determined, the lack of continuity of the fault scarps and their apparent moderate to low height (several meters) suggest that the Quaternary slip rate across the fault is probably much less than 0.2 mm/yr.</p>
Date and Compiler(s)	<p>2016</p> <p>Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources</p> <p>Michael N. Machette, U.S. Geological Survey, Retired</p>
References	<p>#1003 Clemons, R.E., and Seager, W.R., 1973, Geology of Souse Springs quadrangle, New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 100, 31 p., 1 pl., scale 1:24,000.</p> <p>#1020 Mack, G.H., Salyards, S.L., and James, W.C., 1993, Magnetostratigraphy of the Plio-Pleistocene Camp Rice and Palomas formations in the Rio Grande rift of southern New Mexico: American Journal of Science, v. 293, p. 49–77.</p> <p>#1260 Seager, W.R., 2010, Geologic map of the Hatch quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Geologic Map 213, scale 1:24,000.</p> <p>#626 Seager, W.R., Clemons, R.E., Hawley, J.W., and Kelley,</p>

R.E., 1982, Geology of northwest part of Las Cruces 1° x 2° sheet, New Mexico: New Mexico Bureau of Mines and Mineral Resources Geologic Map 53, 3 sheets, scale 1:125,000.

[Questions or comments?](#)

[Facebook](#) [Twitter](#) [Google](#) [Email](#)

[Hazards](#)

[Design](#) [Ground Motions](#) [Seismic Hazard Maps & Site-Specific Data](#) [Faults](#) [Scenarios](#)

[Earthquakes](#) [Hazards](#) [Data](#) [Education](#) [Monitoring](#) [Research](#)

[Home](#) [About Us](#) [Contacts](#) [Legal](#)