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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.

unnamed faults near Loma Colorado de Abajo (Class A) No. 2047

Last Review Date: 2016-06-26

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 2047, unnamed faults near Loma Colorado de Abajo, 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	The unnamed faults near Loma Colorado de Abajo can be placed into two groups based on strike: a group of north- to northwest-striking normal faults, and a group of generally east-striking faults. Both groups of faults offset upper Santa Fe Group sediment, although poor exposures prevent determination of age relations between them. The two westernmost faults on Loma Colorado de Abajo offset strongly developed calcic soils that may be correlative with the Llano de Albuquerque.
Name	Some of these unnamed structures have been previously mapped

comments	(Wyant and Olson, 1978 #1429; Hawley and Whitworth, 1996 #1303), but more recent mapping of Personius and others (2000 #1413) shows all recognized faults. The east-trending faults northeast of Loma Colorado de Abajo are included in the Loma Colorado transfer zone of Hawley and Whitworth (1996 #1303).
County(s) and State(s)	SANDOVAL COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Fault traces are from 1:24,000-scale mapping by Personius and others (2000 #1413).
Geologic setting	These structures are intrabasin faults in the northern part of the Albuquerque-Belen basin of the Rio Grande rift. The east-trending faults may be part of the Loma Colorado transfer zone, a northeast trending zone that may accommodate differential movement in the northern part of the Albuquerque-Belen basin (Hawley and Whitworth, 1996 #1303).
Length (km)	4 km.
Average strike	N12°W
Sense of movement	Normal *Comments:* Sense of displacement on the easternmost of the east-trending faults near Loma Colorado de Abajo is open to question. Hawley and Whitworth (1996 #1303) include this structure in their Loma Colorado transfer zone and show both left lateral and right lateral displacement on this zone. The exposure of this fault northeast of Loma Colorado de Abajo indicates moderately steep north dips of about 70°, which may be more consistent with down-to-the-north normal faulting. Unfortunately, the exposed fault is in soft, muddy sediments, and no slip indicators have been found.

Dip	72°–77° W. *Comments:* Dip measurements are from Personius and others (2000 #1413).
Paleoseismology studies	
Geomorphic expression	These faults only are preserved in upper Santa Fe Group sediment, with the exception of the two faults on Loma Colorado de Abajo, which offset calcic soils that may be correlative with the Llano de Albuquerque. No fault scarps are obvious on surficial deposits. Offsets of 5–15 m of the Upper Santa Fe Group gravel and overlying calcic soil are apparent across the two faults on Loma Colorado de Abajo.
Age of faulted surficial deposits	These faults offset upper Santa Fe Group sediment, with the exception of the two faults on Loma Colorado de Abajo, which offset calcic soils that may be correlative with the Llano de Albuquerque. None of the faults offset younger (middle and late Pleistocene) piedmont deposits (Personius and others, 2000 #1413).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* The two faults on Loma Colorado de Abajo offset strongly developed (stage III-IV) calcic soils on upper Santa Fe Group sands and gravels; these soils may be correlative with the early Pleistocene Llano de Albuquerque. The offsets of these deposits (5–15 m) suggest a recurrent faulting history, but middle and late Pleistocene piedmont deposits are not offset by these structures (Personius and others, 2000 #1413).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Inferred low slip rate suggested by about 20 m of offset across two faults on Loma Colorado de Abajo. The surface may correlate with the Llano de Albuquerque based on its strongly developed (stage III-IV) calcic horizon.

Date and Compiler(s)	2016 Stephen F. Personius, U.S. Geological Survey Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#1303 Hawley, J.W., and Whitworth, T.M., compilers, 1996, Hydrogeology of potential recharge areas for the basin- and valley-fill aquifer systems, and hydrogeochemical modeling of proposed artificial recharge of the upper Santa Fe aquifer, northern Albuquerque basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources Open-File Report 402-D, 575 p. #1413 Personius, S.F., Machette, M.N., and Stone, B.D., 2000, Preliminary geologic map of the Loma Machete quadrangle, Sandoval County, New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-2334, scale 1:24,000. #1429 Wyant, D.J., and Olson, A., 1978, Preliminary geologic map of the Albuquerque 1° by 2° quadrangle, northwestern New Mexico: U.S. Geological Survey Open-File Report 78-467, 7 p., 1 pl., scale 1:250,000.