Jump to Navigation

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 in the southern Socorro basin (Class A) No. 1992

Last Review Date: 2016-07-13

citation for this record: **Cikoski, C.T., compiler, 2016, Fault number 1992, unnamed faults in the southern Socorro basin, 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 02:23 PM.**

Synopsis	This group of northwest-trending intrabasin faults form scarps preserved on high-level surfaces related to filling of the Socorro basin. They are poorly preserved and low relief. They are interpreted to offset the middle Pleistocene top of the basin fill but not younger eolian or alluvial units.
Name comments	Originally mapped by Cikoski (2012 #7446) but not named.
County(s) and State(s)	SOCORRO COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of	Good

location	Compiled at 1:24,000 scale. *Comments:* Compiled from 1:24,000 scale mapping (Cikoski, 2012 #7446).
Geologic setting	These unnamed intrabasin faults form small scarps across the constructional top of the Santa Fe Group (rift basin fill) east of the modern Rio Grande floodplain in the vicinity of the Bosque del Apache National Wildlife Refuge. They are located in the southern part of the Socorro basin and offset the Plio-Pleistocene Sierra Ladrones Formation. Scarps are commonly buried by late Pleistocene-Holocene eolian material and alluvium derived from nearby hills (Cerro de la Campana, Sand Mountain, Little San Pascual Mountains). Late Pleistocene-Holocene sediments do not show evidence of fault deformation.
Length (km)	km.
Average strike	
Sense of movement	Normal
Dip Direction	NE
Paleoseismology studies	
Geomorphic expression	These faults form small (commonly <5 m high), mainly discontinuous, primarily east-facing scarps on the constructional top of the Santa Fe Group (rift basin fill). No data on scarp morphology has been collected from these faults. Scarps are variably blanketed and concealed by post-Santa Fe Group eolian and alluvial deposits.
Age of faulted surficial deposits	These faults deform the constructional top of the Santa Fe Group, the age of which is constrained to 700–800 ka in the Albuquerque basin (Connell and others, 2013 #7235) and in the basins of the southern Rio Grande rift (Mack and others, 2006 #7447). Younger deposits locally burying the top of the Santa Fe do not appear to be deformed.
Historic earthquake	
Most recent prehistoric	middle and late Quaternary (<750 ka)

deformation	*Comments:* Faults deform the 700–800 ka constructional top of the Santa Fe Group (Mack and others, 2006 #7447; Connell and others, 2013), but do not appear to offset late Pleistocene alluvium or eolian material locally burying the constructional top.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr
Date and Compiler(s)	2016 Colin T. Cikoski, New Mexico Bureau of Geology & Mineral Resources
References	#7446 Cikoski, C.T., 2012, Geologic map of the San Antonio SE 7.5-minute quadrangle, Socorro County, New Mexico: New Mexico Bureau of Geology and Mineral Resources Open-File Geologic Map 228, scale 1:24,000. #7235 Connell, S.D., Smith, G.A., Geissman, J.W., and McIntosh, W.C., 2013, Climatic controls on nonmarine depositional sequences in the Albuquerque Basin, Rio Grande rift, north-central New Mexico, *in* Hudson, M.R., and Grauch, V.J.S., eds., New perspectives on Rio Grande rift basins—From tectonics to groundwater: Geological Society of America Special Paper 494, p. 383–425, doi:10.1130/2013.2494(15) #7447 Mack, G.H., Seager, W.R., Leeder, M.R., Perez-Arlucea, M., and Salyards, S.L., 2006, Pliocene and Quaternary history of the Rio Grande, the axial river of the southern Rio Grande rift, New Mexico, USA: Earth-Science Reviews 79, p. 141–162.