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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 intrabasin faults (Class A) No. 2062

Last Review Date: 2015-12-15

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

citation for this record: **Machette, M.N., and Jochems, A.P., compilers, 2015, Fault number 2062, unnamed intrabasin faults, 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	This group of intrabasin faults deforms a high (old) geomorphic surface (the Jornada del Muerto) related to ancient floodplain of the ancient Rio Grande. The faults have relatively small displacement in deposits that are probably 700–900 ka. However, younger movement cannot be precluded without detailed studies of scarp morphology or trenching, neither of which have been conducted.
Name comments	This group of unnamed faults forms a wide zone of intrabasin deformation between the south-southeast-trending Jornada Draw fault [2056] on the north and the similar-trending East Tonuco fault [2061] on the south.

County(s) and State(s)	DONA ANA COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Originally generalized from trace of the fault shown on 1:125,000-scale map of Seager and others (1987 #627). The location of the fault was digitized at 1:24,000 scale using photogrammetry to accurately map its trace from this map.
Geologic setting	This group of intrabasin faults resembles the southern end of the Jornada Draw fault [2056c]. These faults deform a high-level geomorphic surface (Jornada del Muerto) that represents an ancient, long abandoned floodplain of the Rio Grande (Mack and others, 1993 #1020). The faults have relatively small displacement at the surface as determined from 1:24,000-scale topographic maps of the area.
Length (km)	28 km.
Average strike	N16°W
Sense of movement	Normal *Comments:* Inferred from regional extension related to the Rio Grande rift and from dips measured on faults of similar age and orientation in the region.
Dip Direction	W; N; E
Paleoseismology studies	
Geomorphic expression	These faults form a group of subdued, yet conspicuous scarps that are easily seen on the rather flat surface of the southern Jornada del Muerto. No information is available about scarp heights or morphology. Most of the scarps appear to be 5–20 m high based on 1:24,000-scale topographic maps.
Age of faulted surficial deposits	The faults displace the constructional surface of the Camp Rice Formation (fluvial facies), which probably became stabilized about 700–900 ka (Mack and others, 1993 #1020). No detailed

	mapping has been done along the faults to determine if younger deposits are offset.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* The faults are younger that the surface of the Camp Rice Formation (fluvial facies), which probably became stabilized about 700–900 (Mack and others, 1993 #1020). However, the scarps are readily visible on aerial photographs, suggesting that they are considerably younger than sediment of the Camp Rice Formation.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip-rate category is assigned based on 5–20 m vertical displacement of a surface estimated to be of 700–900 k.y. old.
Date and Compiler(s)	2015 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#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. #627 Seager, W.R., Hawley, J.W., Kottlowski, F.E., and Kelley, S.A., 1987, Geology of east half of Las Cruces and northeast El Paso 1° x 2° sheets, New Mexico: New Mexico Bureau of Mines and Mineral Resources Geologic Map 57, 3 sheets, scale 1:125,000.

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