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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 west of the Rio Puerco (Class A) No. 2115

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

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Synopsis	These intrabasin faults east of the Coyote Springs fault [2114] in the southwest Albuquerque basin of the Rio Grande rift are mostly expressed as short fault scarps in deposits of the upper Santa Fe Group Sierra Ladrones Formation; some have offsets of 3–20 m in middle Pleistocene alluvium. Most of the faults are partly to nearly completely buried by eolian sand.
Name comments	This group of structures consists of numerous short to relatively long, generally isolated, north-trending faults within the Belen sub-basin of the Albuquerque basin west of the Rio Puerco that

	were mapped by Machette (1982 #1401), Machette and McGimsey (1983 #1024), and Love and Young (1983 #1723). Some of these faults were previously mapped and named by Kelley (1977 #1106), including the east-down Gabaldon fault, the northern part of which was mapped by Lozinsky and Tedford (1991 #1339).
County(s) and State(s)	SOCORRO COUNTY, NEW MEXICO VALENCIA COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Fault traces compiled using photogrammetric methods and previous mapping of Machette and McGimsey (1983 #1024) at 1:250,000 scale and Lozinsky and Tedford (1991 #1339) at 1:24,000 scale.
Geologic setting	These faults dip to the east and west, and form a broad zone within the active part of the Belen sub-basin of the Albuquerque basin, west of the Rio Puerco. The longest fault (~27 km) in this group of structures (Gabaldon fault of Kelley, 1977 #1106) is thought to be an east-down listric fault at depth based on 2D geophysical modeling and well data (Grauch and Connell, 2013 #7268).
Length (km)	22 km.
Average strike	N7°W
Sense of movement	Normal
Dip Direction	E; W *Comments:* Grauch and Connell (2013 #7268) show the longest east-down fault in this group of structures as a relatively shallow listric fault based on 2D geophysical modeling and well data.
Paleoseismology studies	
Geomorphic expression	These faults are marked by subdued, discontinuously preserved scarps that are mostly covered by eolian sand within the western

	part of the Belen sub-basin. Machette and McGimsey (1983 #1024) measured offsets of 3–20 m in middle Pleistocene alluvium.
Age of faulted surficial deposits	These faults offset lower Pleistocene sediment of the upper Santa Fe Group Sierra Ladrones Formation, and early and middle Pleistocene alluvium (Machette, 1978 #1223; Machette and McGimsey, 1983 #1024).
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* No deposits younger than middle Pleistocene (150–750 ka) have been shown to be offset by these faults, but the 3–20 m offsets measured by Machette and McGimsey (1983 #1024) indicate a recurrent history of movement that in some cases probably extended into the late Pleistocene.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Low slip-rate category assigned based on offsets of 3–20 m of middle Pleistocene (150–750 ka) alluvium (Machette and McGimsey, 1983 #1024).
Date and Compiler(s)	2016 Stephen F. Personius, U.S. Geological Survey Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#7268 Grauch, V.J.S., and Connell, S.D., 2013, New perspectives on the geometry of the Albuquerque basin, Rio Grande rift, New Mexico: Insights from geophysical models of rift-fill thickness, *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. 427–462, doi:10.1130/2013.2494(16). #1106 Kelley, V.C., 1977, Geology of Albuquerque basin, New Mexico: New Mexico Bureau of Mines and Mineral Resources Memoir 33, 60 p., 2 pls. #1723 Love, D.W., and Young, J.D., 1983, Progress report on the

	late Cenozoic geologic evolution of the lower Rio Puerco, *in* Chapin, C.E., and Callender, J.F., eds., Socorro region II: New Mexico Geological Society, 34th Field Conference, October 13-15, 1983, Guidebook, p. 277-284. #1399 Lozinsky, R.P., and Tedford, R.H., 1991, Geology and paleontology of the Santa Fe Group, southwestern Albuquerque basin, Valencia County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 132, 35 p., 3 pls., scale 1:24,000. #1401 Machette, M.N., 1982, Quaternary and Pliocene faults in the La Jencia and southern part of the Albuquerque-Belen basins, New Mexico—Evidence of fault history from fault-scarp morphology and Quaternary geology, *in* Grambling, J.A., and Wells, S.G., eds., Albuquerque Country II: New Mexico Geological Society, 33rd Field Conference, November 4-6, 1982, Guidebook, p. 161-169. #1024 Machette, M.N., and McGimsey, R.G., 1983, Map of Quaternary and Pliocene faults in the Socorro and western part of the Fort Sumner 1° x 2° quadrangles, central New Mexico: U.S. Geological Survey Miscellaneous Field Studies Map MF-1465-A, 12 p. pamphlet, 1 sheet, scale 1:250,000. #1223 Machette, M.N., compiler, 1978, Preliminary geologic map of the Socorro 1° by 2° quadrangle, central New Mexico: U.S. Geological Survey Open-File Report 78-607, 1 sheet, scale 1:250,000.