

# 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 west of Mountainair (Class A) No. 2124

Last Review Date: 2016-04-12

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

*citation for this record:* Machette, M.N., and Jochems, A.P., compilers, 2016, Fault number 2124, unnamed faults west of Mountainair, 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.

<b>Synopsis</b>	Little is known about these faults on the eastern margin of the Manzano Mountains. They were mapped on the basis of aerial photography and map interpretation, and form obvious northwest-(uphill) facing scarps on piedmont-slope deposits of middle (?) Pleistocene age. No scarp profiles have been measured, and the ages of the piedmont-slope deposits are not well established.
<b>Name comments</b>	These fault scarps were first mapped by Machette and McGimsey (1983 #1024) on the basis of aerial photo interpretation. They extend discontinuously to the southwest across the piedmont

	slope on the east margin of the Manzano Mountains from Arroyo de Manzano (on the north) to a point about 2 km south of Cañon Espinoso (on the south). They are located about 10 km west-northwest of Mountainair, New Mexico.
<b>County(s) and State(s)</b>	TORRANCE COUNTY, NEW MEXICO
<b>Physiographic province(s)</b>	BASIN AND RANGE
<b>Reliability of location</b>	Good Compiled at 1:24,000 scale.  <i>Comments:</i> Trace from original interpretation of aerial photography at about 1:60,000 scale, which Machette and McGimsey (1983 #1024) compiled at 1:250,000-scale for the fault map of Socorro quadrangle. This mapping was revised using photogrammetric methods to accurately place the fault trace at 1:24,000 scale.
<b>Geologic setting</b>	These down-to-the-northwest normal faults are subparallel to the general trend of young faults within the modern physiographic expression of the Rio Grande rift and are, thus, probably related to regional east-west extension. They do not appear to cause substantial offset of the underlying Permian bedrock (Abo and Yeso Formations) according to the mapping of Machette (1978 #1223).
<b>Length (km)</b>	14 km.
<b>Average strike</b>	N24°E
<b>Sense of movement</b>	Normal
<b>Dip Direction</b>	NW
<b>Paleoseismology studies</b>	
<b>Geomorphic expression</b>	These faults form northwest-facing scarps on piedmont-slope deposits. The scarps oppose the regional topographic gradient (to the southeast) of the piedmont and thus block or deflect stream drainages. Near the south end of the fault, a small graben is formed by two faults trending roughly east-west; though prominent on aerial photography, this feature has not been investigated in the field to assess its age and relation to the

	<p>northeast-trending fault strands. The faults have subdued to somewhat prominent morphology on aerial photography, but no detailed studies have been made of their morphology. Machette and McGimsey (1983 #1024) estimated that these scarps are associated with 3–8 m of displacement.</p>
<b>Age of faulted surficial deposits</b>	<p>No detailed studies or mapping of the faulted deposits have been conducted, but Machette and McGimsey (1983 #1024) inferred that the scarps are formed on piedmont-slope deposits of middle to possible late Pleistocene age. These inferences were made of the basis of unpublished mapping and aerial photo interpretation for the geologic and fault maps of the Socorro quadrangle (Machette, 1978 #1223; Machette and McGimsey, 1983 #1024). Oviatt (2011 #7452) notes that the broad piedmont surfaces cut by the faults are typically capped by at least 1 m of loess, but it is unclear whether this younger material is cut by the faults.</p>
<b>Historic earthquake</b>	
<b>Most recent prehistoric deformation</b>	<p>middle and late Quaternary (&lt;750 ka)</p> <p><i>Comments:</i> Based on presence of scarps on deposits of middle (?) to possible late Pleistocene age (Machette and McGimsey, 1983 #1024).</p>
<b>Recurrence interval</b>	
<b>Slip-rate category</b>	<p>Less than 0.2 mm/yr</p> <p><i>Comments:</i> Low slip-rate category assigned based on scarp morphology data of Machette and McGimsey (1983 #1024) that suggest 3 m of displacement for the scarps on possible late Pleistocene deposits and 8 m of displacement for the scarps on middle Pleistocene deposits.</p>
<b>Date and Compiler(s)</b>	<p>2016  Michael N. Machette, U.S. Geological Survey, Retired  Andrew P. Jochems, New Mexico Bureau of Geology &amp; Mineral Resources</p>
<b>References</b>	<p>#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,</p>

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.

#7452 Oviatt, C.G., 2011, Geologic map of the Punta de Agua 7.5-minute quadrangle, Torrance County, New Mexico: New Mexico Bureau of Geology & Mineral Resources Open-File Geologic Map 220, scale 1:24,000.

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