

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](#).

Hackler Tank fault (Class A) No. 2080

Last Review Date: 2016-01-11

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 2080, Hackler Tank fault, 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 fault was named for Hackler Tank, a small reservoir in the upper reach of Bignell Arroyo. The fault extends along the northeast margin of the Quail Hills, where it splits into two subparallel strands. The most northerly strand of the fault ends about 1 km north of Arroyo Angostura. Little is known about the timing of Quaternary offset along the fault.
Name comments	This fault was named by Seager and others (1975 #995) for Hackler Tank, a small reservoir in the upper reach of Bignell Arroyo (Sierra Alta 7.5-minute quadrangle). The fault extends from Hersey Arroyo on the southeast (about 1 km north of Sierrro Kemado), northwest along the northeast margin of the Quail Hills

	(Seager and others, 1975 #995), where it splits into two subparallel strands. The most northerly strand of the fault ends about 1 km north of Arroyo Angostura.
County(s) and State(s)	DOÑA ANA COUNTY, NEW MEXICO
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. <i>Comments:</i> Trace of the fault is from 1:24,000-scale maps of Seager and Hawley (1973 #996) and Seager and others (1975 #995).
Geologic setting	The Hackler Tank fault forms the northeastern edge of the Quail Hills, in part. Total stratigraphic separation may be only 60–100 m where the fault places Tertiary rock against sediment of the Camp Rice Formation, but along the northern part the trace is entirely within sediment of the Camp Rice Formation. From its geometry and age, it appears that the fault may be a northwestward en echelon extension of the Sierró Kemado [2079] and Ward Tank [2078] faults.
Length (km)	9 km.
Average strike	N29°W
Sense of movement	Normal
Dip	65° SW <i>Comments:</i> The only dip recorded along the fault is 65°, and this is along a southwest dipping splay of the northeast-dipping main fault (Seager and others, 1975 #995).
Paleoseismology studies	
Geomorphic expression	The fault forms scarps on the Jornada I surface (middle Pleistocene), which is a local constructional piedmont surface of the Camp Rice Formation. North of Hersey Arroyo, the fault splits into two subparallel strands: the more northerly of these strands downwarps the Jornada I surface to the east (Seager and

	others, 1975 #995, fig. 13). No detailed studies have been made of the fault's scarp morphology.
Age of faulted surficial deposits	The fault offsets sediment of the upper part of the Camp Rice Formation (early to middle Pleistocene) and the Jornada I surface (middle Pleistocene) as much as 6 m. Younger (late Pleistocene) alluvial surfaces are not known to be offset by the Hackler Tank fault.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) <i>Comments:</i> Timing based on offset of Jornada I surface (middle Pleistocene). However, late Pleistocene faulting may have occurred on the basis of the young appearance of the fault's scarps (Seager and others, 1975 #995).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Low slip-rate category assigned based on 6-m-high scarps on the Jornada I surface, which is considered to be 500–700 ka in age (Gile and others, 2007 #7346).
Date and Compiler(s)	2016 Michael N. Machette, U.S. Geological Survey, Retired Andrew P. Jochems, New Mexico Bureau of Geology & Mineral Resources
References	#7346 Gile, L.H., Monger, H.C., Grossman, R.B., Ahrens, R.J., Hawley, J.W., Peterson, F.F., Gibbens, R.P., Lenz, J.M., Bestelmeyer, B.T., and Nolen, B.A., 2007, A 50th anniversary guidebook for the Desert Project: U.S. Department of Agriculture, Natural Resources Conservation Service, National Soil Survey Center, 295 p. #996 Seager, W.R., and Hawley, J.W., 1973, Geology of Rincon quadrangle, Doña Ana County, New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 101, 42 p., 2 pls., scale 1:24,000. #995 Seager, W.R., Clemons, R.E., and Hawley, J.W., 1975, Geology of Sierra Alta quadrangle, Doña Ana County, New

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