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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.

Wilkins fault (Class A) No. 1579

Last Review Date: 2016-10-06

citation for this record: **Sawyer, T.L., and Oswald, J.A., compilers, 1998, Fault number 1579, Wilkins 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 02:36 PM.**

Synopsis	This mostly continuous, down-to-the-west normal fault bounds the linear west front of Knoll Mountain juxtaposes Quaternary alluvium against bedrock along the range front which is locally abrupt and well defined. Reconnaissance photogeologic mapping of fault related features is the source of data. Trench investigations and studies of scarp morphology have not been conducted along the fault.
Name comments	Refers to faults mapped by Slemmons (1964, unpublished Wells 1:250,000-scale map) and Dohrenwend and others (1991 #290) bounding west side of Knoll Mountain from about 3 km south of Primrose Draw northward to Noh Springs. This structure was named the Wilkins fault by dePolo (1998 #2845); the fault is about 10 km north-northeast of Wilkins. **Fault ID:** Refers to fault WE10 (Wilkins fault) of dePolo (1998

	#2845).
County(s) and State(s)	ELKO COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE COLUMBIA PLATEAU
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location based on 1:250,000-scale maps of Dohrenwend and others (1991 #290) and Slemmons (1964, unpublished Wells 1:250,000-scale map). Mapping by Dohrenwend and others (1991 #290) based photogeologic analysis of 1:58,000-nominal-scale color-infrared photography transferred directly to 1:100,000-scale topographic quadrangle maps enlarged to scale of the photographs. Quaternary fault map of Slemmons (1964, unpublished Wells 1√) from analysis of 1:60,000-scale AMS photography transferred to mylar overlay on a 1:250,000-scale topographic map using proportional dividers.
Geologic setting	This continuous, down-to-the-west normal fault bounds the linear west front of Knoll Mountain from 3 km south of Primrose Draw northward to Noh Springs (Slemmons, 1964, unpublished Wells 1:250,000-scale map; Dohrenwend and others, 1991 #290).
Length (km)	15 km.
Average strike	N13°E
Sense of movement	Normal *Comments:* (Slemmons, 1964, unpublished Wells 1:250,000-scale map; dePolo, 1998 #2845)
Dip Direction	W
Paleoseismology studies	
Geomorphic expression	The fault is expressed by Quaternary alluvium juxtaposed against bedrock along the range front which is locally abrupt and well defined (Slemmons, 1964, unpublished Wells 1:250,000-scale map; Dohrenwend and others, 1991 #290). Slemmons (1964, unpublished Wells 1:250,000-scale map) mapped a scarp along the range front west of Black Rock Spring.

Age of faulted surficial deposits	Quaternary. The faults displace alluvium interpreted from photogeologic mapping to be Quaternary in age (Slemmons, 1964, unpublished Wells 1:250,000-scale map; Dohrenwend and others, 1991 #290).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Although timing of the most recent event is not well constrained, mapping by Dohrenwend and others (1991 #290) and Slemmons (1964, unpublished Wells 1:250,000-scale map) suggests a Quaternary time based on reconnaissance photogeologic studies.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.01 mm/yr for the fault based on the presence of scarps on alluvium and the absence of basal facets. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) support a low slip rate. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	1998 Thomas L. Sawyer, Piedmont Geosciences, Inc. John A. Oswald, Piedmont Geosciences, Inc.
References	#2845 dePolo, C.M., 1998, A reconnaissance technique for estimating the slip rate of normal-slip faults in the Great Basin, and application to faults in Nevada, U.S.A.: Reno, University of Nevada, unpublished Ph.D. dissertation, 199 p. #290 Dohrenwend, J.C., McKittrick, M.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Wells 1° by 2° quadrangle, Nevada, Utah, and Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-2184, 1 sheet, scale 1:250,000.

Questions or comments?