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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.

Wheeler Peak fault zone (Class A) No. 1430

Last Review Date: 1998-06-28

citation for this record: **Sawyer, T.L., compiler, 1998, Fault number 1430, Wheeler Peak fault zone, 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 02:05 PM.**

Synopsis	This discontinuous zone of down-to-the-west normal faults bounds the west side of the southern Snake Range and has piedmont faults on strike to the south in Spring Valley. Reconnaissance mapping of faulted Quaternary deposits, photogeologic mapping of tectonic geomorphic features, and limited analysis of scarp morphology are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to the Shoshone fault mapped and named by Schell (1981 #2844); subsequently mapped with greater continuity by Dohrenwend and others (1991 #287). Later referred to as the Wheeler Peak fault zone by dePolo (1998 #2845); the latter name is used herein. Fault bounds Spring Valley and extends along southernmost flank of the Snake Range from west of Red Ledges to west of Wheeler Peak.

	Fault ID: Refers to fault 124 of Schell (1981 #2844) and to fault LD7 of dePolo (1998 #2845).
County(s) and State(s)	LINCOLN COUNTY, NEVADA WHITE PINE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844) and of Dohrenwend and others (1991 #287). Original mapping by Schell (1981 #2843; 1981 #2844) based on photogeologic analysis of primarily 1:24,000-scale color aerial photography supplemented with 1:60,000-scale black-and-white aerial photography, transferred by inspection to 1:62,500-scale topographic maps and photographically reduced and directly transferred to 1:250,000-scale topographic maps, and field verification. Mapping by Dohrenwend and others (1991 #287) based on 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.
Geologic setting	This discontinuous zone of down-to-the-west normal faults bounds the west side of the southern Snake Range and has piedmont faults on strike to the south in Spring Valley.
Length (km)	36 km.
Average strike	N3°W
Sense of movement	Normal *Comments:* Not studied in detail; sense of movement inferred from topography.
Dip Direction	W *Comments:* (Schell, 1981 #2844; Dohrenwend and others, 1991 #287)
Paleoseismology	

studies	
Geomorphic expression	Fault is expressed by linear range front juxtaposing Quaternary alluvium against bedrock and high (30 m), moderately defined (<14? slope angle) scarps on Quaternary deposits (Schell, 1981 #2844; Dohrenwend and others, 1991 #287).
Age of faulted surficial deposits	Early to middle Pleistocene alluvium (> 700 k.y.) (Schell, 1981 #2843; 1981 #2844), and Pleistocene deposits (10 ka-1.5 Ma) (Dohrenwend and others, 1991 #287).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* The timing of most recent prehistorical event is not well constrained. Dohrenwend and others (1991 #287; 1996 #2846) suggested a Pleistocene time based on reconnaissance photogeologic studies. Schell (1981 #2844) suggested similar timing based on the linearity of the southern Snake Range and the presence of a scarp on middle to early Pleistocene alluvium.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No detailed data exists to determine slip rates for this fault. 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.
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. #287 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Lund

	1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2180, 1 sheet, scale 1:250,000. #2846 Dohrenwend, J.C., Schell, B.A., Menges, C.M., Moring, B.C., and McKittrick, M.A., 1996, Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada, *in* Singer, D.A., ed., Analysis of Nevada's metal-bearing mineral resources: Nevada Bureau of Mines and Geology Open-File Report 96-2, 1 pl., scale 1:1,000,000. #2843 Schell, B.A., 1981, Faults and lineaments in the MX Sitting Region, Nevada and Utah, Volume I: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 77 p. #2844 Schell, B.A., 1981, Faults and lineaments in the MX Siting Region, Nevada and Utah, Volume II: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 29 p., 11 pls., scale 1:250,000.