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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.

Squaw Hills fault (Class A) No. 1367

Last Review Date: 1998-06-30

citation for this record: **Sawyer, T.L., compiler, 1998, Fault number 1367, Squaw Hills 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 02:13 PM.**

Synopsis	This down-to-the-east normal fault bounds east flank of several hills (Red Ring Mountain, Squaw Hills, and Haligan Mesa) and has several piedmont faults within and along the west side of Big Sand Springs Valley. Reconnaissance photogeologic mapping and limited analysis of scarp morphology of these faults are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to faults mapped by Ekren and others (1973 #2936), to the Squaw Hills fault and to unnamed faults to the south mapped by Schell (1981 #2844), and Dohrenwend and others (1996 #2846) also mapped the entire fault zone. dePolo (1998 #2845) applied the Squaw Hill[s] name to the entire length of the fault as described here. The fault zone extends along the west side of Big Sand Springs Valley from the east flank of Haligan Mesa to the southeast flank of Red Ring Mountain.

	Fault ID: Includes fault 7 on Plate A7 of Schell (1981 #2844) and refers to fault T18 of dePolo (1998 #2845).
County(s) and State(s)	NYE 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 *Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844) and unpublished map of the Tonopah 1?x2? sheet by J.C. Dohrenwend published at 1:100,000-scale by Dohrenwend and others (1996 #2846). 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 subsequent field verification. Mapping by Dohrenwend and others (1996 #2846) 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 down-to-the-east normal fault bounds east flank of several hills (Red Ring Mountain, Squaw Hills, and Haligan Mesa) and has several piedmont faults within and along the west side of Big Sand Springs Valley.
Length (km)	29 km.
Average strike	N13°E
Sense of movement	Normal *Comments:* (Ekren and others, 1973 #2936; Schell, 1981 #2844)
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	Fault is marked by abrupt, well-defined and less well-defined fault scarps juxtaposing Quaternary alluvium against bedrock, and by

	scarps and lineaments on Quaternary and Tertiary deposits (Schell, 1981 #2844; Dohrenwend and others, 1996 #2846).
Age of faulted surficial deposits	Pleistocene (Schell, 1981 #2844; Kleinhampl and Ziony, 1985 #2851; Dohrenwend and others, 1996 #2846).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Although timing of the most recent event is not well constrained, the age-category assigned is based on reconnaissance photogeologic mapping by Dohrenwend and others (1996 #2846) that suggests a Pleistocene time. Schell (1981 #2844) report an indeterminate time; however, we have included, for convenience, two short faults shown on Plate A7 at the north end of the fault zone that is reported as younger than 15 ka (Schell,1981 #2844). Ekren and others (1973 #2936) showed the fault cutting Quaternary-Tertiary alluvium that was subsequently mapped as Quaternary alluvium by Kleinhampl and Ziony (1985 #2851).
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. #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. #2936 Ekren, E.B., Hinrichs, E.N., Quinlivan, W.D., and Hoover, D.L., 1973, Geologic map of the Moores Station quadrangle, Nye County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-756, scale 1:48,000. #2851 Kleinhampl, F.J., and Ziony, J.I., 1985, Geology of Northern Nye County, Nevada: Nevada Bureau of Mines and Geology Bulletin 99A, 172 p. #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.