

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](#).

Echo Canyon fault (Class A) No. 1377

Last Review Date: 1998-07-11

citation for this record: Sawyer, T.L., compiler, 1998, Fault number 1377, Echo Canyon 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 02:14 PM.

Synopsis	This distributed group of short, down-to-the-east normal faults borders east side of The Wall, rim of the Lunar Lake caldera, and extends north along flank of the southern Pancake Range. Reconnaissance photogeologic mapping of tectonic geomorphic features is the source of data. Trench investigations and studies of scarp morphology have not been completed.
Name comments	Refers to Echo Canyon fault mapped and named by Schell (1981 #2844) and also mapped by Dohrenwend and others (1991 #287) and includes fault south of Black Rock Summit mapped by Dohrenwend and others (1991 #287). These discontinuous faults extend along east side of the southern Pancake Range from The Wall to near Meteorite Crater. Fault ID: Refers in part of fault 103 on Plate A6 of Schell (1981 #2844).
County(s) and	

County(s) and State(s)	NYE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	<p>Good Compiled at 1:100,000 scale.</p> <p><i>Comments:</i> 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.</p>
Geologic setting	This distributed group of short, down-to-the-east normal faults borders east side of The Wall, rim of the Lunar Lake caldera (Kleinhampl and Ziony, 1985 #2851), and extends north along flank of the southern Pancake Range.
Length (km)	36 km.
Average strike	N9°E
Sense of movement	<p>Normal</p> <p><i>Comments:</i> (Schell, 1981 #2843; Dohrenwend and others, 1991 #287)</p>
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	The fault is expressed by scarps juxtaposing Quaternary alluvium against bedrock, and by scarps on Quaternary basalt (at U.S. Highway 6) and on surficial deposits, and by lineaments on Quaternary deposits (Schell, 1981 #2843; Dohrenwend and others, 1991 #287).

Age of faulted surficial deposits	Early to middle Quaternary (Dohrenwend and others, 1991 #287).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Although the timing of the most recent prehistorical event is not well constrained, Schell (1981 #2844) suggested a late Pleistocene time based on a reconnaissance photogeologic study. Dohrenwend and others (1996 #2846) suggested an early to middle Quaternary time based on reconnaissance photogeologic study. Due to lack of general agreement, we assign the most conservative age category.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region.
Date and Compiler(s)	1998 Thomas L. Sawyer, Piedmont Geosciences, Inc.
References	#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, <i>in</i> 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. #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.

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