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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.

Jakes Valley fault zone (Class A) No. 1223

Last Review Date: 2000-10-24

citation for this record: **Redsteer, M.H., compiler, 2000, Fault number 1223, Jakes Valley 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 02:16 PM.**

Synopsis	This fault zone is composed of a group of down-to-the-east scarps on the western side of Jakes Valley. Locally, there is evidence of late Pleistocene movement.
Name comments	This fault zone, referred to as the Jakes Valley fault zone by dePolo (1998 #2845), is defined by a group of subparallel, down-to-the-east scarps on the western side of Jakes Valley. The northern part of this fault zone was also mapped as the Moorman Ranch fault by Schell (1981 #2843). The zone extends along the southeast flank of the Butte Mountains, across U.S. Highway 50, and south along the eastern flank of the Moorman Ridge to Limestone Peak, south of Hayden Canyon. **Fault ID:** Referred to as fault number 54 of Schell (1981 #2843) and EY7 of dePolo (1998 #2845).
County(s) and	

County(s) and State(s)	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 map of Dohrenwend and others (1992 #2480). Mapping based on photogeologic analysis of 1:24,000-scale color aerial photography supplemented with 1:60,000-scale black-and-white aerial photography transferred to 1:62,500-scale topographic maps and photographically reduced and transferred to 1:250,000-scale topographic maps. Subsequent mapping by 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	The Jakes Valley fault zone exhibits features that typify Basin and Range extensional faulting. It is a major down-to-the-east range front fault on the eastern margin of the White Pine Range and defines the western margin of the Jakes Valley. Paleozoic carbonate strata exposed in the White Pine Range by uplift along the Jakes Valley fault are folded into the north-trending doubly-plunging White Pine anticline (Tracy, 1980 #4340). Overlying and less deformed Tertiary rocks primarily consist of Oligocene ash-flow tuffs. Uplift along this fault zone, to the south and north of Illipah, Nev., is typical of the usual north-south oriented Basin and Range extensional faulting, and links the Butte Mountains to Moorman Ridge on the south and to the central White Pine Range on the west.
Length (km)	34 km.
Average strike	N13°E
Sense of movement	Normal
Dip Direction	E
Paleoseismology studies	
Geomorphic expression	This long fault zone is defined by a group of down-to-the-east scarps on the western side of Jakes Valley. On the eastern side of

	Moorman Ridge the fault is expressed by an abrupt and linear piedmont-hillslope transition. Dohrenwend and others (1992 #2480) show the fault south of Illipah as juxtaposing bedrock against Quaternary alluvium. Locally the fault is expressed as scarps on surficial deposits. To the north of U.S. Highway 50, the transition is less abrupt and shows little topographic expression except where fault scarps fan out across the valley floor on the eastern edge of the Butte Mountains.
Age of faulted surficial deposits	Permian, Tertiary, and late Pleistocene. Fault scarps are shown to be on late to middle Pleistocene (10–700 ka) deposits by Schell (1981 #2843), and on early, middle or late Pleistocene (10 ka to 1.6 Ma) by Dohrenwend and others (1992 #2480).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Estimated to be late Pleistocene (15–700 ka) by Schell (1981 #2843) and as early to middle Pleistocene and late Pleistocene (10 ka to 1.6 Ma) by Dohrenwend and others (1992 #2480). On the basis of these reconnaissance studies, the fault is inferred to be late Quaternary.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* dePolo (1998 #2845) reported 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)	2000 Margaret Hisa Redsteer, U.S. Geological Survey
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.

	#2480 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Ely 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2181, 1 sheet, scale 1:250,000. #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. #4340 Tracy, W.C., 1980, Structure and stratigraphy of the central White Pine Range, east-central Nevada: Long Beach, California State University, unpublished M.S. thesis, 66 p.