Jump to Navigation

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.

Medicine Range fault zone (Class A) No. 1706

Last Review Date: 2000-06-27

citation for this record: **Rowley, P.C., and Anderson, R.E., compilers, 2000, Fault number 1706, Medicine Range 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 02:26 PM.**

Synopsis	The Medicine Range fault zone consists of 2 groups of N- to NE-striking, parallel and aligned, mid-valley faults and many lineaments spanning a N-S length of 17 km in Butte Valley south and southeast of the Medicine Range. Most sediments cut by the faults are queried late Quaternary, but some are early to middle and late Pleistocene. The faults are interpreted to be late Quaternary in one study and to be early to middle and late Pleistocene in another.
Name comments	A fault zone named by Schell (1981 #2843) for a cluster of parallel and aligned N- to NNE-striking, mid-valley Pleistocene faults in western Butte Valley southeast of the Medicine Range. The fault zone is about 14 km long and 4 km wide, spanning the Elko and White Pine County line. Also includes lineaments and minor faults oriented parallel to and north of the faults Schell (1981 #2843), but these were not compiled here but instead the

	compilation of Dohrenwend and others (1991 #286) was followed. The overall fault zone spans a N-S distance of 17 km. **Fault ID:** Referred to as fault 15 by Schell (1981 #2843).
County(s) and State(s)	ELKO COUNTY, NEVADA WHITE PINE COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Compiled at 1:250,000 by Schell (1981 #2843) and Dohrenwend and others (1991 #286; 1992 #2480). The fault locations of Dohrenwend and others (1991 #286; 1992 #2480), which are followed here, were produced by analysis of 1:58,000-nominal-scale color-infrared photography transferred directly to 1:100,000-scale topographic quadrangle maps enlarged to the scale of the photographs.
Geologic setting	A mid-valley series of faults, within the fault basin of Butte Valley, mapped as Pleistocene by Schell (1981 #2843) and Dohrenwend and others (1991 #286; 1992 #2480). The faults are parallel with the adjacent fault-block ranges and hills.
Length (km)	34 km.
Average strike	N13°E
Sense of movement	Normal
Dip Direction	W; E
Paleoseismology studies	
Geomorphic expression	Little is known about the geomorphic expression of faults of this zone. Barnhard (1985 #428) did not recognize scarps on alluvium, possibly suggesting the fault's weak geomorphic expression. One study characterized it as a "Zone of short scarps and lineaments" Schell (1981 #2843). That mapping shows widely distributed abundant short lineaments that were not shown on the more recent map by Dohrenwend and others (1991 #286; 1992 #2480) which shows only a group of scarps cutting Quaternary surficial deposits and/or surfaces.

Age of faulted surficial deposits	According to Schell (1981 #2843), the fault displaces rock, sediment, and/or surfaces as old as lower Tertiary volcanic rock and as young as "intermediate-age alluvial fan" (15-700 ka), and the fault is overlain by "young age alluvial fan" (<15 ka). Dohrenwend and others (1991 #286) estimated, on the basis of photogeologic reconnaissance, that one short (< 2 km) scarp is formed on surficial deposits and/or erosion surfaces of queried late Quaternary age (10-130 ka).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* On the basis of an inferred age of displaced Quaternary sediment, Schell (1981 #2843) interpreted the age of latest faulting to be late Pleistocene. Based on photogeologic reconnaissance, Dohrenwend and others (1991 #286) considered one short scarp to be formed on surficial deposits or erosion surfaces of queried late Quaternary age.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* This category is the lowest slip rate assigned and is based on the similarity of these faults to other relatively inactive faults in the province.
Date and Compiler(s)	2000 Peter C. Rowley, U.S. Geological Survey, Retired R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#428 Barnhard, T.P., 1985, Map of fault scarps formed in unconsolidated sediments, Elko 1° x 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-1791, 1 sheet, scale 1:250,000. #286 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Elko 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2179, 1 sheet, scale 1:250,000. #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.