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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.

Selenite Range fault zone (Class A) No. 1617

Last Review Date: 1999-03-09

citation for this record: **Sawyer, T.L., and Adams, K., compilers, 1999, Fault number 1617, Selenite 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	This short nearly continuous zone is comprised of range-front normal faults that bound the western front of the Selenite Range from west of Mt. Limbo north to the area west of Luxor Peak; it includes a piedmont fault in Poito Valley, west of Kumiva Peak and Luxor Peak. The range-front faults juxtapose Quaternary alluvium against bedrock and are expressed as the abrupt range front of the Selenite Range. Piedmont faults are expressed as subparallel to oblique west-facing scarps and lineaments on upper piedmont-slope deposits that form a complex fault zone about 2 km wide west of Kumiva Peak. Reconnaissance photogeologic mapping and regional geologic mapping are the sources of data. Trench investigations and detailed studies of scarp morphology have not been conducted.
Name comments	Refers to faults mapped by Slemmons (1974, unpublished Lovelock 1:250,000-scale map), Johnson (1977 #2569), and

	Dohrenwend and others (1991 #285) on the western side of the Selenite Range. dePolo (1998 #2845) referred to these faults and those to the south along the western side of the Nightingale Range as the Selenite Range fault zone; this descriptive name is used herein. **Fault ID:** Refers to fault LL12A of dePolo (1998 #2845).
County(s) and State(s)	PERSHING COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Fault locations are primarily based on 1:250,000-scale map of Dohrenwend and others (1991 #285), which was 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. Additional fault locations are from 1:250,000-scale bedrock map of Johnson (1977 #2569). Fault locations were checked against 1:250,000-scale photogeologic map of Slemmons (1974, unpublished Lovelock 1:250,000-scale map).
Geologic setting	This short nearly continuous zone has range-front normal faults that bound the western front of the Selenite Range from west of Mt. Limbo north to the area west of Luxor Peak. The fault zone includes piedmont faults in Poito Valley, west of Kumiva Peak and Luxor Peak. The range-front faults juxtapose Quaternary alluvium against bedrock and are expressed as the abrupt range front of the Selenite Range. To the north of Luxor Peak, the fault zone appears to step left several kilometers. From this point north, the western margin of the Selenite Range is deeply embayed and appears to lack Quaternary fault control.
Length (km)	18 km.
Average strike	N9°E
Sense of movement	Normal *Comments:* Sense of movement indicate by Dohrenwend and others (1991 #285).

Dip Direction	W
Paleoseismology studies	
Geomorphic expression	The range-front faults are expressed as the abrupt range front along the southern half of the Selenite Range, especially from Kumiva Peak south. Piedmont faults are expressed as subparallel discontinuous west-facing scarps and lineaments on proximal piedmont-slope deposits that form a complex fault zone about 2 km wide west of Kumiva Peak. These scarps appear to be buried by younger (late Quaternary) deposits. dePolo (1998 #2845) reports a maximum preferred basal fault facet height of 219 m (201–232 m).
Age of faulted surficial deposits	Undifferentiated Quaternary alluvium (early and middle to late ? Quaternary) piedmont-slope deposits are faulted; Quaternary-Tertiary basalt is faulted against bedrock (Johnson, 1977 #2569; Dohrenwend and others, 1991 #285).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* The timing of most recent event is not well constrained. Quaternary time is suggested based on reconnaissance photogeologic mapping of Dohrenwend and others (1991 #285).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No detailed data exists to constrain slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.419 mm/yr based on an empirical relationship between his preferred maximum basal facet height and vertical slip rate. The size of the facets (tens to hundreds of meters, as measured from topographic maps) indicates they are the result of many seismic cycles, and thus the derived slip rate reflects a long-term average. However, the late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) suggest the slip rate during this period is of a lesser magnitude. Accordingly, the less than 0.2 mm/yr slip-rate

	category has been assigned to this fault.
Date and Compiler(s)	1999 Thomas L. Sawyer, Piedmont Geosciences, Inc. Kenneth Adams, 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. #285 Dohrenwend, J.C., McKittrick, M.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Lovelock 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2178, 1 sheet, scale 1:250,000. #2569 Johnson, M.G., 1977, Geology and mineral deposits of Pershing County, Nevada: Nevada Bureau of Mines and Geology Bulletin 89, 115 p., scale 1:250,000.