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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.

Slate Ridge faults (Class A) No. 1097

Last Review Date: 1999-01-12

citation for this record: **Anderson, R.E., compiler, 1999, Fault number 1097, Slate Ridge faults, 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 02:19 PM.**

Synopsis	The traces of two east-trending faults in the east part of Slate Ridge are defined by lineaments or scarps that, according to photogeologic investigation, are mainly on Tertiary deposits or expressed as faults that juxtapose Quaternary deposits against bedrock. Less than 1 km of trace length on the northern fault is mapped as a weakly expressed lineament or scarp on Quaternary deposits. Displacement is probably down to the north. There is no information on displacement amount, scarp characteristics, slip rate, or recurrence interval.
Name comments	The name Slate Ridge faults was applied by Piety (1995 #915) to two main east-striking faults in the eastern part of Slate Ridge (east of Gold Point). Fault traces of the Slate Ridge faults are shown on a 1:100,000-scale photogeologic map by Reheis and Noller (1991 #1195) and on a 1:250,000-scale photogeologic map by Dohrenwend and others (1992 #289). These faults strike

	easterly and extend from north and south of the Gold Coin Mine, westward, to north and south of Mount Dunfee. **Fault ID:** Faults referred to as SLR by Piety (1995 #915).
County(s) and State(s)	ESMERALDA COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location is from Reheis and Noller (1991 #1195) who compiled the faults on a 1:100,000 scale topographic map from photogeologic study of aerial photos at scales ranging from 1:24,000 to 1:80,000.
Geologic setting	The faults are located in the Goldfield section of the Walker Lane belt of Stewart (1988 #1654), an area characterized by a general lack of major through-going northwest-striking strike-slip faults and a scarcity of major Basin and Range faults. They tend to truncate the more northeasterly topographic grain of the Slate Ridge-Gold Mountain area. Their easterly trend is similar to numerous faults that form scarps and prominent topographic lineaments on Tertiary deposits in the region (Dohrenwend and others, #289). They strike conspicuously more easterly than several northeast-striking Quaternary faults that bound ranges and ridges in the area of west central Nevada and adjacent California (Reheis and Noller, 1991 #1195; Dohrenwend and others, 1992 #289). Their relation to the northeast-striking faults is unknown. They were not recognized in the 1:250,000-scale mapping of the geology of Esmeralda County (Albers and Stewart, 1972 #3863).
Length (km)	14 km.
Average strike	N83°E
Sense of movement	Normal *Comments:* No specific slip-sense data are available, but the faults are oriented approximately normal to the regional extension direction, and thus could be expected to be normal faults. Reheis and Noller (1991 #1195) decorate the fault traces with tics indicating down-to-the-north displacement.

Dip Direction	N *Comments:* Down-to-the north faults and sparse north-facing scarps (Reheis and Noller, 1991 #1195; Dohrenwend and others, 1992 #289) may indicate that the faults dip north.
Paleoseismology studies	
Geomorphic expression	Major portions of both faults are in Tertiary deposits, and their traces were identified by Reheis and Noller (1991 #1195) from previous mapping, probably by Dohrenwend and others (1992 #289). Dohrenwend and others (1992 #289) show several faults as features that juxtapose Quaternary deposits against bedrock; they characterize these faults as similar to major range-front faults except that associated fault systems are significantly less extensive and fault scarps are substantially lower, shorter, and less continuous. Only a 0.6 km trace on the northern fault is portrayed by Reheis and Noller (1991 #1195) as a weakly expressed lineament or scarp on a surface of Quaternary deposits. Thus, geomorphic evidence for Quaternary displacement on the Slate Ridge faults is weak.
Age of faulted surficial deposits	Detailed mapping and subdivision of Quaternary deposits have not been done in this area. Dohrenwend and others (1992 #289) and Reheis and Noller (1991 #1195) show evidence that indicates that undivided Quaternary deposits are deformed by the Slate Ridge faults.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Based on photogeologic study, Dohrenwend and others (1992 #289) and Reheis and Noller (1991 #1195) show evidence for Quaternary activity along the Slate Ridge faults; detailed mapping and study of Quaternary deposits and fault-related features, however, have not been done in this area.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr

	Comments: Low slip-rate category is assigned on the basis of poor geomorphic preservation, lack of mapped fault scarps, and relative inactivity of similar distributed faults in the Basin and Range province.
Date and Compiler(s)	1999 R. Ernest Anderson, U.S. Geological Survey, Emeritus
References	#3863 Albers, J.P., and Stewart, J.H., 1972, Geology and mineral deposits of Esmeralda County, Nevada: Nevada Bureau of Mines and Geology Bulletin 78, 88 p. #289 Dohrenwend, J.C., Schell, B.A., McKittrick, M.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Goldfield 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2183, 1 sheet, scale 1:250,000. #915 Piety, L.A., 1995, Compilation of known and suspected Quaternary faults within 100 km of Yucca Mountain, Nevada and California: U.S. Geological Survey Open-File Report 94-112, 404 p., 2 pls., scale 1:250,000. #1195 Reheis, M.C., and Noller, J.S., 1991, Aerial photographic interpretation of lineaments and faults in late Cenozoic deposits in the eastern part of the Benton Range 1:100,000 quadrangle and the Goldfield, Last Chance Range, Beatty, and Death Valley Junction 1:100,000 quadrangles, Nevada and California: U.S. Geological Survey Open-File Report 90-41, 9 p., 4 sheets, scale 1:100,000. #1654 Stewart, J.H., 1988, Tectonics of the Walker Lane belt, western Great Basin—Mesozoic and Cenozoic deformation in a zone of shear, *in* Ernst, W.G., ed., Metamorphism and crustal evolution of the western United States, Ruby Volume VII: Englewood Cliffs, New Jersey, Prentice Hall, p. 683-713.