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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.

unnamed faults in southwestern Excelsior Mountains (Class A) No. 1301

Last Review Date: 1998-07-19

citation for this record: **Adams, K., compiler, 1998, Fault number 1301, unnamed faults in southwestern Excelsior Mountains, 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 02:15 PM.**

Synopsis	This distributed group of short, generally subparallel and primarily intermontane faults strikes northeast is are located in the southern Anchorite Hills and southwest Excelsior Mountains near the California-Nevada border (Stewart and others, 1981 #2894; Dohrenwend, 1982 #2481; 1982 #2870; Stewart and others, 1982 #2873). One of the faults bounds the northeast trending part of an arcuate range front in northeastern Mono Valley. The intermontane faults are primarily expressed as aligned drainages, saddles, and sidehill benches, although some also bound small basins filled with Quaternary eolian and alluvial sediments (Stewart and others, 1981 #2894). Most of the intermontane faults appear to only displace Tertiary bedrock, but one of them also juxtaposes Quaternary eolian and alluvial deposits against bedrock (Stewart and others, 1981 #2894), providing evidence for young movement within the zone. Reconnaissance photogeologic

	mapping and bedrock mapping of the faults are the sources of data. Trench investigations and detailed studies of scarp morphology have not been completed.
Name comments	Refers to a group of faults in the southwestern Excelsior Mountains and the southern Anchorite Hills. dePolo (1998 #2845) referred to some of these faults as the Anchorite Hills fault. Faults were mapped by Slemmons (1966, unpublished Walker Lake 1? X 2? sheet), Dohrenwend (1982 #2481; 1982 #2870), and Stewart and others (1981 #2894; 1982 #2873).
County(s) and State(s)	MONO COUNTY, CALIFORNIA MINERAL COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location primarily based on 1:250,000-scale maps (Dohrenwend, 1982 #2481; 1982 #2870) and field-based bedrock mapping of Stewart and others (1981 #2894); small-scale 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	These short generally subparallel and primarily intermontane faults strike northeast and are located in the southern Anchorite Hills and southwest Excelsior Mountains near the California-Nevada border (Stewart and others, 1981 #2894; Dohrenwend, 1982 #2481; 1982 #2870; Stewart and others, 1982 #2873). One of the faults bounds the northeast trending part of an arcuate range front in northeastern Mono Valley.
Length (km)	25 km.
Average strike	N40°E
Sense of movement	Left lateral *Comments:* Sinistral sense is inferred from general knowledge of sense of movement on other northeast-striking faults in the region; normal sense of movement is from Stewart and others (1981 #2894) and inferred from topography.

Dip Direction	NW; SE
Paleoseismology studies	
Geomorphic expression	The intermontane faults primarily are expressed as aligned drainages, saddles, and sidehill benches, although some also bound small basins filled with Quaternary eolian and alluvial sediments (Stewart and others, 1981 #2894; Dohrenwend, 1982 #2481).
Age of faulted surficial deposits	Quaternary through Tertiary. A single intermontane fault juxtaposes Quaternary eolian and alluvial sediments against Tertiary bedrock (Stewart and others, 1981 #2894). Elsewhere, the faults only involve Tertiary bedrock, but are included in this group because of similar strikes and proximity to faults with demonstrated Quaternary offset.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Although timing of most recent event is not well constrained, a Quaternary time is suspected based on mapping by Stewart and others (1981 #2894).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* A low slip rate is inferred from general knowledge of slip rates estimated for other faults in the region.
Date and Compiler(s)	1998 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. #2481 Dohrenwend, J.C., 1982, Map showing late Cenozoic faults in the Walker Lake 1° by 2° quadrangle, Nevada-California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-D, 1 sheet, scale 1:250,000.

	#2870 Dohrenwend, J.C., 1982, Surficial geologic map of the Walker Lake 1° by 2° quadrangle, Nevada-California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-C, 1 sheet, scale 1:250,000. #2873 Stewart, J.H., Carlson, J.E., and Johannesen, D.C., 1982, Geologic map of the Walker Lake 1° by 2° quadrangle, California and Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1382-A, scale 1:250,000. #2894 Stewart, J.H., Kleinhampl, F.J., Johannesen, D.C., Speed, R.C., and Dohrenwend, J.C., 1981, Geologic map of the Huntoon Valley quadrangle, Mineral County, Nevada and Mono County California: U.S. Geological Survey Open-File Report 81-274, scale 1:62,500.