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.

unnamed faults in southern Garfield Hills (Class A) No. 1729

Last Review Date: 1998-09-24

citation for this record: **Adams, K., compiler, 1998, Fault number 1729, unnamed faults in southern Garfield Hills, 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 02:24 PM.**

Synopsis	This widely distributed group of generally short, discontinuous, and commonly anastomosing east-west and northeast striking intermontane and range bounding faults are located in the southern Garfield Hills and in the vicinity of Garfield Flat. It extends from the eastern edge of Whiskey Flat east to the vicinity of Camp Douglas on the eastern side of Garfield Flat. Reconnaissance photogeologic mapping of surficial deposits and young faults and general bedrock mapping are the sources of data. Trench Investigations and studies of scarp morphology have not been conducted for this group of faults.
Name comments	Refers to a group of faults in southern Garfield Hills and near Garfield Flat mapped by Slemmons (1966, unpublished Walker Lake 1? X 2? sheet), Dohrenwend (1982 #2481; 1982 #2870:,

	1982 #2900), and Stewart and others (1982 #2873). dePolo (1998 #2845) referred to one short north-striking fault in the northwest part of Garfield Flat as the Northwestern Garfield Flat fault zone. **Fault ID:** Includes fault number WL34 (Northwestern Garfield Flat fault zone) of dePolo (1998 #2845).
County(s) and State(s)	MINERAL COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Locations primarily based on 1:62,500-scale (Dohrenwend, 1982 #2900) and 1:250,000-scale maps (Dohrenwend, 1982 #2481; 1982 #2870); 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. Two fault bounding a graben near Whisky Spring are based on mapping by Slemmons (1966, unpublished Walker Lake 1? X 2? sheet) from analysis of 1:60,000-scale AMS photography transferred to mylar overlay on a 1:250,000-scale topographic map using proportional dividers.
Geologic setting	This group of generally short, discontinuous, and commonly anastomosing east-west and northeast striking intermontane and range bounding faults are located in the southern Garfield Hills and in the vicinity of Garfield Flat (Dohrenwend, 1982 #2481; 1982 #2870:, 1982 #2900).
Length (km)	29 km.
Average strike	N51°E
Sense of movement	Left lateral *Comments:* dePolo (1998 #2845) indicates that faults in this group are characterized by strike-slip movement. Thus, sinistral movement is inferred based on the the strike of the fault, and a subordinate normal sense of movement is inferred based on topographic relief.

Dip Direction	N; S
Paleoseismology studies	
Geomorphic expression	Faults in bedrock south and west of Garfield Flat are expressed as strong topographic lineaments delineated by aligned drainages, saddles, and sidehill benches (Dohrenwend, 1982 #2900). Some of the primarily bedrock faults bound small basins filled with Quaternary alluvium. Several faults bound large topographic escarpments, most notably on the north side of the Excelsior Mountains (Dohrenwend, 1982 #2900). Slemmons (1966, unpublished Walker Lake 1? X 2? sheet) mapped a short graben north of Whisky Spring bound by fault scarps.
Age of faulted surficial deposits	Holocene to Tertiary. Many faults displace or juxtapose Holocene to upper Pleistocene alluvium against bedrock, while other faults only displace bedrock (Dohrenwend, 1982 #2900). However, Quaternary movement on the bedrock faults is suspected because of their similar orientation and proximity to the demonstrably active faults.
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Although the most recent event is not well constrained, a latest Quaternary time is indicated by several faults mapped by Dohrenwend (1982 #2481; 1982 #2870:, 1982 #2900) that displace Holocene alluvium or juxtapose Holocene alluvium against bedrock.
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. #2900 Dohrenwend, J.C., 1982, Preliminary surficial geologic map of the Excelsior Mountains area, west-central Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1372, scale 1:62,500. #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.