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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 near Black Dyke Mountain (Class A) No. 1315

Last Review Date: 1998-07-19

citation for this record: **Adams, K., and Sawyer, T.L., compilers, 1998, Fault number 1315, unnamed faults near Black Dyke Mountain, 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	Group of generally north-northwest-striking range front and intermontane faults bounding ridges of Black Dyke Mountain and eastern side of Excelsior Mountains. 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 group of faults bounding ridges of Black Dyke Mountain and eastern side of Excelsior Mountains. Mapped by Nielsen (1965 #2544), Slemmons (1966, unpublished Walker Lake 1?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 the northeast faults in this group as the Black Dyke Mountain fault.

	Fault ID: Refers to fault number WL36 (Black Dyke Mountain fault) 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:* Location based on 1:62,500-scale (Dohrenwend, 1982 #2900) and 1:250,000-scale maps (Dohrenwend, 1982 #2481); 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 Two faults, one near Douglas Canyon and the other southwest of Black Mountain, are based on Slemmons (1966, unpublished Walker Lake 1? X 2? sheet); mapping from analysis of 1:60,000-scale AMS photography transferred to mylar overlay on a 1:250,000-scale topographic map using proportional dividers. Short north northeast-striking faults bound the eastern range front and low hills on the piedmont slope of the Excelsior Mountains in the vicinity of Silver Dyke Canyon. North northwest-striking faults in the central and northern part bound east and west sides of ridges comprising Black Dyke Mountain (Dohrenwend, 1982 #2900).
Geologic setting	Short north northeast-striking faults bound the eastern range front and low hills on the piedmont slope of the Excelsior Mountains in the vicinity of Silver Dyke Canyon. North northwest-striking faults in the central and northern part bound east and west sides of ridges comprising Black Dyke Mountain (Dohrenwend, 1982 #2900).
Length (km)	23 km.
Average strike	N13°W
Sense of movement	Normal *Comments:* Dextral sense for northern faults in the group is from Nielsen (1965 #2544), Slemmons (1966, unpublished Walker Lake 1? X 2? sheet), and Ekren and Byers (1984 #2902); normal

	sense of movement is inferred from topography.
Dip Direction	E; W
Paleoseismology studies	
Geomorphic expression	Faults are expressed as range-bounding faults that juxtapose Quaternary alluvium and erosional surfaces against bedrock and as aligned drainages and saddles where faults cross bedrock. dePolo (1998 #2845) reports a maximum preferred basal fault facet height of 122 m (98-146 m).
Age of faulted surficial deposits	Pleistocene to Tertiary. Faults juxtapose late Quaternary and Pleistocene alluvium and erosional surfaces against bedrock (Dohrenwend, 1982 #2900). One fault only cuts bedrock but Quaternary movement is suspected because of its proximity and similar orientation to other active faults in the area.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* The timing of most recent event is not well constrained, and some of the mapping may indicate young faulting (Dohrenwend, 1982 #2900). However, the Quaternary age assignment here is based on Dohrenwend and others (1996 #2846).
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. Thomas L. Sawyer, 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. #2846 Dohrenwend, J.C., Schell, B.A., Menges, C.M., Moring, B.C., and McKittrick, M.A., 1996, Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada, *in* Singer, D.A., ed., Analysis of Nevada's metal-bearing mineral resources: Nevada Bureau of Mines and Geology Open-File Report 96-2, 1 pl., scale 1:1,000,000. #2902 Ekren, E.B., and Byers, F.M., Jr., 1984, The Gabbs Valley Range—A well exposed segment of the Walker Lane in west-central Nevada, *in* Lintz, J., Jr., ed., Western geological excursions: Geological Society of America, Annual Meeting, Reno, Nevada, Guidebook, v. 4, p. 203-215. #2544 Nielsen, R.L., 1965, Right-lateral strike-slip faulting in the Walker Lane, west-central Nevada: Geological Society of America Bulletin, v. 76, no. 11, p. 1301-1308. #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.

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