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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.

Adobe Range fault (Class A) No. 1561

Last Review Date: 1998-10-14

citation for this record: **Sawyer, T.L., Oswald, J.A., and Rowley, P.C., compilers, 1998, Fault number 1561, Adobe Range fault, 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 02:35 PM.**

Synopsis	This distributed zone of parallel, down-to-the-west normal faults bounds the west front of the Adobe Range and extends across the adjacent piedmont-slope. The zone extends from Lower Lost Camp Spring southward to Barrel Springs. Faults form piedmont scarps on early Pleistocene alluvium, juxtapose Quaternary alluvium against bedrock, and forms prominent topographic lineaments on Tertiary bedrock. Reconnaissance photogeologic mapping of fault related features is the source of data. Trench investigations and studies of scarp morphology have not been conducted along the fault.
Name comments	Refers to faults mapped by Slemmons (1964, unpublished Wells 1? X 2? sheet), Coats (1987 #2861), and Dohrenwend and others (1991 #286; 1991 #290). Named the Adobe Range fault in the Elko sheet and the Coal Mine Basin fault zone in the Wells sheet by dePolo (1998 #2845). We prefer the former name herein

	because none of the mapped faults are in Coal Mine basin. Fault zone bounds the west front of the Adobe Range from Lower Lost Camp Spring southwest to Barrel Springs. The fault as shown contains a 7-km-long gap near its southern end (Dohrenwend and others, 1991 #286). **Fault ID:** Referred to as fault number WE2 (Coal Mine Basin fault zone) and EK1 (Adobe Range fault) by dePolo (1998 #2845).
County(s) and State(s)	ELKO COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:100,000 scale. *Comments:* Location based on 1:250,000-scale map of Dohrenwend and others (1991 #286; 1991 #290); 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	This distributed zone of parallel, down-to-the-west, range front and piedmont normal faults bound the west front of the Adobe Range and extend across adjacent piedmont-slope. The zone extends from Lower Lost Camp Spring southward to Barrel Springs. Faults form piedmont scarps on early Pleistocene alluvium, juxtapose Quaternary alluvium against bedrock, and form prominent topographic lineaments on Tertiary bedrock (Dohrenwend and others, 1991 #286; 1991 #290).
Length (km)	40 km.
Average strike	N31°E
Sense of movement	Normal *Comments:* (Dohrenwend and others,1991 #286; 1991 #290; dePolo, 1998 #2845)
Dip Direction	NW
Paleoseismology	

studies	
Geomorphic expression	Faults form scarps on early Pleistocene alluvium, juxtapose Quaternary alluvium against bedrock at front of Adobe Range, and form prominent topographic lineaments on Tertiary bedrock (Dohrenwend and others, 1991 #286; 1991 #290).
Age of faulted surficial deposits	Early to middle Pleistocene. The fault displaces alluvium interpreted by Dohrenwend and others (1991 #286) from photogeologic mapping to be early to middle Pleistocene in age. Elsewhere the fault places Quaternary alluvium against bedrock (Dohrenwend and others, 1991 #286; 1991 #290).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* The timing of most recent event is not well constrained, and the two reconnaissance photogeologic mapping studies that document the timing of faulting of these structures do not concur. The source of the traces and the age for the late Quaternary faults is Slemmons (1964, unpublished Wells 1? X 2? sheet). Dohrenwend and others (1991 #286; 1991 #290) do not indicate any of these faults are younger than middle Quaternary. The assigned age category is based on the published source.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No detailed data exists to determine slip rates for this fault. dePolo (1998 #2845) assigned a reconnaissance vertical slip rate of 0.01 mm/yr for the fault based on the presence of scarps on alluvium and the absence of basal facets. The late Quaternary characteristics of this fault (overall geomorphic expression, continuity of scarps, age of faulted deposits, etc.) support a low slip rate. Accordingly, the less than 0.2 mm/yr slip-rate category has been assigned to this fault.
Date and Compiler(s)	1998 Thomas L. Sawyer, Piedmont Geosciences, Inc. John A. Oswald, Piedmont Geosciences, Inc. Peter C. Rowley, U.S. Geological Survey, Retired
References	#2861 Coats, R.R., 1987, Geology of Elko County, Nevada:

	Nevada Bureau of Mines and Geology Bulletin 101, 112 p., scale 1:250,000. #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. #290 Dohrenwend, J.C., McKittrick, M.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Wells 1° by 2° quadrangle, Nevada, Utah, and Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-2184, 1 sheet, scale 1:250,000. #286 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Elko 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2179, 1 sheet, scale 1:250,000.