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.

Pahroc fault (Class A) No. 1128

Last Review Date: 1999-07-19

citation for this record: **Anderson, R.E., compiler, 1999, Fault number 1128, Pahroc 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 02:17 PM.**

Synopsis	The Pahroc fault is a north-striking, down-to-the-east, normal fault that is apparently complicated by cutting two mountain blocks, the alluviated area between them, and a basin beyond them. The south part is marked by two parallel overlapping strands each of which forms the boundary between bedrock on the west and Quaternary alluvium on the east. To the north, the fault trace is in alluvium, but it is not clear if it is expressed as scarps in alluvium or is a lineament in alluvium. Still farther north, the fault cuts Tertiary bedrock of the North Pahroc Range and continues north to form the west margin of the basin occupied by White River Valley where it cuts middle to early Pleistocene basin-fill deposits with a throw in excess of 1 km. The possibility exists that only this north part has documented Quaternary displacement. In any case, the latest displacement is estimated to be middle to early Pleistocene. Data do not allow estimates of either recurrence or slip rate, but the slip rate is probably very low, consistent with characterization of the fault as post tectonic.

Name comments	Name taken from Schell, (1981 #2844) who applied it to a north-striking fault that extends north from the South Pahroc Range through the North Pahroc Range to the alluviated valley of the White River. This same fault was referred to as the North Pahroc fault (C11B) and South Pahroc Range fault (C12) by dePolo (1998 #2845). **Fault ID:** Refers to fault #33 of Schell, (1981 #2844, Table A2). North part mapped as fault C11B and south part as fault C12 by dePolo (1998 #2845).
County(s) and State(s)	LINCOLN COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Fault traces taken from Schell (1981 #2844) who compiled them at 1:250,000 from 1:25,000-scale aerial photos following field study.
Geologic setting	The Pahroc fault is a north-striking, down-to-the-east, normal fault that is apparently complicated by cutting two mountain blocks, the alluviated area between them, and a basin beyond them. The south part is marked by two parallel overlapping strands each of which forms the boundary between bedrock on the west and Quaternary alluvium on the east (Ekren and others, 1977 #1036, Schell, 1981 #2844). The eastern trace bounds a subsidiary bedrock ridge and the western trace bounds the main Pahroc Range block. To the north to the vicinity of Pahroc Summit on State Highway 25, the fault trace is in alluvium, but it is not clear from the mapping of Schell (1981 #2844) if it is expressed as scarps or as a lineament on alluvium. Schell (1981 #2844) does not map it across the alluvial gap between the South and North Pahroc Ranges, suggesting that it is not expressed as scarps there. North of that alluvial gap, the fault cuts Tertiary bedrock of the North Pahroc Range (Ekren and others, 1977 #1036). It continues north to form the west structural margin of the basin beneath southern White River Valley where DiGuiseppi and Bartley (1991 #3843) report more than 1 km of down-to-east displacement of early to middle Pleistocene basin-fill deposits. They characterize the current status of the fault as post tectonic.

	The possibility exists that only the north part of the Pahroc fault has documented Quaternary displacement. The possibility also exists that the fault connects to the north with fault [1402] as suggested by dePolo (1998 #2845).
Length (km)	37 km.
Average strike	N1°W
Sense of movement	Normal *Comments:* It appears to be a north-striking normal fault typical of faults in the region (Ekren and others, 1977 #1036; DiGuiseppi and Bartley, 1991 #3843).
Dip	70° E *Comments:* Probably steep, DiGuiseppi and Bartley (1991 #3843) show it in cross section through the White River Valley with a dip of 70?.
Paleoseismology studies	
Geomorphic expression	Only the north and south parts of the fault were mapped as marked by continuous scarps, the remainder being mapped as discontinuous scarps or lineaments (Schell, 1981 #2843; Schell, 1981 #2844).
Age of faulted surficial deposits	Only the northern 13 km of the fault was characterized as having Pleistocene displacement, the remainder was characterized as indeterminate, but probably Quaternary (Schell, 1981 #2844). Schell (1981 #2844) suggests that the youngest unit displaced is middle to early Pleistocene (700 ka-1.8 Ma), consistent with the descriptions of DiGuiseppi and Bartley (1991 #3843). Similarly, Dohrenwend and others (1996 #2846) map it as a Quaternary and/or Tertiary fault based on an unpublished 1:250,000-scale map of Quaternary faults in the 1? x2? Caliente sheet by J. C. Dohrenwend (published at 1:1,000,000, Dohrenwend and others, 1996 #2846).
Historic earthquake	
Most recent prehistoric	undifferentiated Quaternary (<1.6 Ma)

deformation	*Comments:* For the north part of the fault, Schell (1981 #2844) estimates the probable age of last movement as middle to early Pleistocene. The oldest unit not displaced is intermediate-age alluvium with an estimated age range of 15-700 ka (mostly 15-200 ka) (Schell, 1981 #2844, Tables A2, A3)
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)	1999 R. Ernest Anderson, U.S. Geological Survey, Emeritus
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. #3843 DiGuiseppi, W.H., and Bartley, J.M., 1991, Stratigraphic effects of change from internal to external drainage in an extending basin, southeastern Nevada: Geological Society of America Bulletin, v. 103, p. 48-55. #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. #1036 Ekren, E.B., Orkild, P.P., Sargent, K.A., and Dixon, G.L., 1977, Geologic map of Tertiary rocks, Lincoln County, Nevada: U.S. Geological Survey Miscellaneous Investigations Map I-1041, 1 sheet, scale 1:250,000.

	#2843 Schell, B.A., 1981, Faults and lineaments in the MX Sitting Region, Nevada and Utah, Volume I: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 77 p. #2844 Schell, B.A., 1981, Faults and lineaments in the MX Siting Region, Nevada and Utah, Volume II: Technical report to U.S. Department of [Defense] the Air Force, Norton Air Force Base, California, under Contract FO4704-80-C-0006, November 6, 1981, 29 p., 11 pls., scale 1:250,000.