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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.

Eastern Simpson Park Mountains fault zone (Class A) No. 1179

Last Review Date: 2000-09-05

citation for this record: **Lidke, D.J., compiler, 2000, Fault number 1179, Eastern Simpson Park Mountains fault zone, 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 02:16 PM.**

Synopsis	This zone of north to northeast-striking faults place bedrock of the Simpson Park Mountains against Quaternary piedmont-slope deposits of the northwestern part of the Kobeh Valley; it also includes scarps and linear features on piedmont-slope deposits of the valley. This fault zone may represent a northern continuation of the more prominently expressed Hickison Summit fault zone [1200], which is directly to the south. The fault zone has not been studied in detail and little is actually known about the nature and character of these faults. The principle sources of data include photogeologic mapping supplemented by some field verification and reconnaissance photogeologic mapping.
Name comments	Refers to a discontinuous zone of north to northeast-striking faults mapped by Schell (1981 #2844) and Dohrenwend and others

	(1992 #283) along the eastern flank of the north-central part of the Simpson Park Mountains. Schell (1981 #2844) referred to this zone of faults as the Simpson Park Mountain fault and the name used herein is a slight modification of that name. The fault zone extends from about McClusky Pass discontinuously southwest along the eastern flank of the Simpson Park Mountains to about 4 km south of Ferguson Creek. **Fault ID:** Refers to faults shown and labeled as number 55 on plate A2 of Schell (1981 #2844).
County(s) and State(s)	LANDER COUNTY, NEVADA EUREKA COUNTY, NEVADA
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844), Dohrenwend and others (1992 #283). Mapping by Schell (1981 #2843; 1981 #2844) included field verification, but was based primarily on photogeologic analysis of 1:24,000-scale, color, aerial photography that was supplemented by analysis of some, 1:60,000-scale, black-and-white, aerial photography: faults identified on the aerial photographs were transferred by inspection to 1:62,500-scale topographic maps that were photographically reduced to 1:250,000-scale for final compilation of the faults on 1:250,000-scale topographic maps. Mapping by Dohrenwend and others (1992 #283) was based on photogeologic analysis of 1:58,000-nominal-scale, color-infrared photography transferred directly to 1:100,000-scale topographic maps enlarged to the scale of the photographs; these maps were then reduced and compiled at 1:250,000-scale.
Geologic setting	This discontinuous zone of north- to northeast-striking faults is mostly characterized by down-to-the-east faults that juxtapose Paleozoic and Tertiary bedrock of the Simpson Park Mountains against Quaternary piedmont-slope deposits of the adjacent Kobeh Valley (Lehner and others, 1961 #4363; Schell, 1981 #2844; Dohrenwend and others, 1992 #283). None of the faults in this zone were classified as range-front faults by Dohrenwend and others (1992 #283) and much of the eastern flank of the Simpson Park Mountains lacks direct evidence of Quaternary faulting. The

	down-to-the-east faults that place bedrock against piedmont-slope deposits and the sparse east-facing scarps both suggest mostly down-to-the-east offsets along faults that probably reflect some continued Quaternary uplift of the Simpson Park Mountains relative to the adjacent Kobeh Valley. Very little is actually known with certainty, however, about the nature and character of this zone of faults. Schell (1981 #2844) reported a composite scarp height of about 50 m and a maximum scarp angle of about 27? at an unspecified locality along the fault zone.
Length (km)	25 km.
Average strike	N3°E
Sense of movement	Normal *Comments:* Not specifically reported, however, east-facing scarps on piedmont-slope deposits, as well as down-to-the-east faults that juxtapose bedrock against Quaternary deposits, consistently indicate down-to-the-east fault offsets, which in this extensional regime probably reflects principally normal, dip-slip movement along easterly dipping faults.
Dip Direction	SE *Comments:* Not reported, but probably steep, based on dip measurements of other Quaternary faults in localities nearby and elsewhere in the Basin and Range Province.
Paleoseismology studies	
Geomorphic expression	This zone of deformation is expressed by discontinuous fault scarps on Tertiary and Paleozoic bedrock and some scarps and linear features on Quaternary piedmont-slope deposits in the Kobeh Valley (Schell, 1981 #2844; Dohrenwend and others, 1992 #283). Schell (1981 #2844) reported a large composite scarp about 50 m in height, comprising four slope angles, and along which the highest slope angle of 27? is present on the lower 30 m of the slope. Mapping by Schell (1981 #2844) and Dohrenwend and others (1992 #283) also shows fault scarps in Tertiary rocks of the Simpson Park Range, adjacent to this fault zone. Although the scarps on Tertiary rocks provide no direct evidence of Quaternary movement, both Schell (1981 #2844) and Dohrenwend and others (1992 #283) suggested they were

	probably Quaternary features thus are shown herein.
Age of faulted surficial deposits	Schell (1981 #2844) estimated age broad range of 15-700 ka for the youngest faulted deposits. Dohrenwend and others (1992 #283) did not specifically assign ages to any of the faulted deposits on their map, however, their mapping implied a Quaternary age for faulted deposits along the zone.
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) *Comments:* The timing of the most recent prehistoric faulting event is not well constrained. Schell (1981 #2844) assigned an estimated age range of 15-700 ka to the youngest faulted deposits along the fault zone, but he reported that the most recent prehistoric faulting event was probably late Pleistocene in age.
Recurrence interval	*Comments:* Schell (1981 #2844) reported a composite fault scarp that is comprised of four slope angles and he considered this composite scarp to represent multiple Quaternary surface-rupture events along this fault zone.
Slip-rate category	Less than 0.2 mm/yr *Comments:* Not reported; low slip rate selected on the basis of the faults geomorphic expression.
Date and Compiler(s)	2000 David J. Lidke, U.S. Geological Survey
References	#283 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Millett 1° by 2° quadrangle, Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-2176, 1 sheet, scale 1:250,000. #4363 Lehner, R.E., Tagg, K.M., Bell, M.M., and Roberts, R.J., 1961, Preliminary geologic map of Eureka County, Nevada: U.S. Geological Survey Mineral Investigations Field Studies Map MF-178, 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.