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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.

Southern Spring Valley fault zone (Class A) No. 1265

Last Review Date: 2000-11-27

citation for this record: **Sawyer, T.L., and Redsteer, M.H., compilers, 2000, Fault number 1265, Southern Spring Valley 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	The fault zone is comprised of a discontinuous series of primarily east-facing piedmont and intrabasin scarps that suggest down-to-the-east displacement of Quaternary sediment in the southern part of Spring Valley. The fault zone is marked by a linear series of scarps north of Cooper Canyon; to the south of Cooper Canyon the fault zone broadens into a 2-3 km wide zone of subparallel scarps that form a zigzag pattern across the valley floor. These faults appear to splay basinward (south) from the Schell Creek Range fault [1241]. Reconnaissance photogeologic mapping and limited study of the scarps are the sources of data for the Southern Spring Valley fault zone. Trench investigations and detailed studies of scarp morphology have not been completed.
Name	Refers to the Southern Spring fault zone of Schell (1981 #2843;

comments	1981 #2844), also mapped by Dohrenwend and others (1991 #287; 1992 #2480). This broad fault zone extends across the floor of the Spring Valley from approximately 2.5 km southeast of the Cleve Creek gauging station, across U.S. Highway 50, and south to the central part of Baking Powder Flat. **Fault ID:** Refers to fault 123 of Schell (1981 #2843) and is part of fault number EY11 of dePolo (1998 #2845).
County(s) and State(s)	WHITE PINE 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 #287; 1992 #2480) from photogeologic analysis of primarily 1:24,000-scale color aerial photography supplemented with 1:60,000-scale black-and-white aerial photography, transferred by inspection to 1:62,500-scale topographic maps and photographically reduced and directly transferred to 1:250,000-scale topographic maps, and subsequent 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	The Southern Spring Valley fault zone is located within the Spring Valley. It forms a series of down-to-the-east scarps that extend across the piedmont that forms the eastern margin of the Schell Creek Range, and defines the western margin of the Spring Valley. The fault zone is located within the Spring Valley, but is typical of Basin and Range extensional faults that have produced the north-south-trending mountain ranges. These faults may be structurally linked to the Schell Creek Range fault [1241], which is a major Basin and Range extensional fault system.
Length (km)	40 km.
Average strike	N2°W
Sense of movement	Normal

	Comments: Shown as normal faults by Schell (1981 #2843) and Dohrenwend and others (1991 #287; 1992 #2480).
Dip Direction	E; W
Paleoseismology studies	
Geomorphic expression	Schell (1981 #2843) reports that the fault cuts Holocene deposits and form 5-m-high scarps, and that recurrent movement has produced a scarp (on deposits of unknown age) in excess of 18 m elsewhere along the fault. Fault scarps face both east (basinward) and (west) mountainward on an eastward-sloping piedmont.
Age of faulted surficial deposits	Pleistocene and/or latest Quaternary (Dohrenwend and others, 1991 #287; 1992 #2480), as well as Tertiary, Paleozoic and Precambrian (Hose and Blake, 1976 #4341). Schell (1981 #2843) reports that the faults cut Holocene deposits as well as displaced pluvial shorelines and/or Pleistocene glacial moraines.
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* Schell (1981 #2843) reported that fault scarps are present on Holocene deposits, and that movement along the fault has displaced pluvial shorelines and/or Pleistocene glacial moraines (Dohrenwend and others, 1992 #2480).
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Low slip-rate category is assigned on the basis of the relative activity of adjacent Schell Creek Range fault [1241] and similar distributed faults in the Basin and Range province.
Date and Compiler(s)	2000 Thomas L. Sawyer, Piedmont Geosciences, Inc. Margaret Hisa Redsteer, U.S. Geological Survey
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.

#287 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1991, Reconnaissance photogeologic map of young faults in the Lund 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2180, 1 sheet, scale 1:250,000.

#2480 Dohrenwend, J.C., Schell, B.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Ely 1° by 2° quadrangle, Nevada and Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-2181, 1 sheet, scale 1:250,000.

#4341 Hose, R.K., and Blake, M.C., Jr., 1976, Geology and mineral resources of White Pine County, Nevada: Nevada Bureau of Mines and Geology Bulletin 85, 105 p.

#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.