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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.

East Stone Cabin Valley fault (Class A) No. 1354

Last Review Date: 1998-06-30

citation for this record: **Sawyer, T.L., and Anderson, R.E., compilers, 1998, Fault number 1354, East Stone Cabin Valley 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 02:05 PM.**

Synopsis	This northeast striking zone of down-to-the-northwest normal faults bounds the northern end of the Kawich Range and is expressed as distributed piedmont faults in Stone Cabin Valley and Cactus Flat. Reconnaissance photogeologic mapping of fault-related features is the source of data. Trench investigations and detailed studies of scarp morphology have not been conducted along the fault.
Name comments	Refers to faults mapped by Schell (1981 #2844) and by Dohrenwend and others (1992 #289; 1996 #2846). Schell (1981 #2844) named the fault the East Stone Cabin fault and that name was used by Piety (1995 #915) for the southwest part of the fault that extends into Cactus Flat in the Goldfield sheet. dePolo (1998 #2845) named it the Southeast Stone Cabin Valley fault.

	Preference is given to the earlier name. The fault zone extends from northernmost Cactus Flat east of Nixon Peak, across the piedmont slope of the Kawich Range in southernmost Stone Cabin Valley and along the range front to south of Warm Springs Summit. **Fault ID:** Refers to fault 135 on Plates A7 and A8 in Schell (1981 #2844) and to fault T17 of dePolo (1998 #2845). Southern part of the fault referred to as ESC by Piety (1995 #915).
County(s) and State(s)	NYE 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 *Comments:* Location based on 1:250,000-scale maps of Schell (1981 #2844) and of unpublished map of the Tonopah 1?x2? sheet by J.C. Dohrenwend published at 1:100,000-scale by Dohrenwend and others (1996 #2846). Mapping by Schell (1981 #2843; 1981 #2844) based on 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 field verification. Mapping by Dohrenwend and others (1996 #2846) based on 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. The southwest part in Cactus Flat was mapped at 1:100,000 scale using aerial photographs at scales ranging from 1:62,000 to 1:80,000 (Reheis, 1992 #1604).
Geologic setting	This northeast striking zone of down-to-the-northwest normal faults does not follow a major bedrock escarpment. At its northeast and southwest ends it extends into basin settings in Stone Cabin Valley and Cactus Flat respectively, and in its central part forms a sinuous trace across the piedmont slope at the northwest margin of the Kawich Range (Schell, 1981 #2843; Reheis, 1992 #1604). Because of its varied setting, its tectonic significance is uncertain. It may be a normal fault, but not a

	range-bounding fault.
Length (km)	41 km.
Average strike	N26°E
Sense of movement	Normal *Comments:* (Schell, 1981 #2844; Dohrenwend and others, 1996 #2846)
Dip Direction	NW
Paleoseismology studies	
Geomorphic expression	Some abrupt, well defined scarps juxtaposing Quaternary alluvium against bedrock, and piedmont scarps and lineaments (Schell, 1981 #2844; Dohrenwend and others, 1996 #2846) primarily express the northern part of the fault. Reheis (1992 #1604) shows the southwest part of the fault in Cactus Flat as a 5-km-wide zone of discontinuous, weakly (mostly) to moderately (minor) expressed lineaments or scarps on Quaternary (mostly) and Tertiary (minor) deposits, whereas Schell (1981 #2843) shows the entire section as a single northeast-striking, mostly dashed (discontinuous), sinuous trace across the piedmont.
Age of faulted surficial deposits	Late Pleistocene alluvium (Schell, 1981 #2844; Dohrenwend and others, 1996 #2846).
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Although timing of the most recent event is not well constrained, studies by Schell (1981 #2844) and by Dohrenwend and others (1996 #2846) agree on a late Pleistocene time.
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. 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. #289 Dohrenwend, J.C., Schell, B.A., McKittrick, M.A., and Moring, B.C., 1992, Reconnaissance photogeologic map of young faults in the Goldfield 1° by 2° quadrangle, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2183, 1 sheet, scale 1:250,000. #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. #915 Piety, L.A., 1995, Compilation of known and suspected Quaternary faults within 100 km of Yucca Mountain, Nevada and California: U.S. Geological Survey Open-File Report 94-112, 404 p., 2 pls., scale 1:250,000. #1604 Reheis, M.C., 1992, Aerial photographic interpretation of lineaments and faults in late Cenozoic deposits in the Cactus Flat and Pahute Mesa 1:100,000 quadrangles and the western parts of the Timpahute Range, Pahranagat Range, Indian Springs, and Las Vegas 1:100,000 quadrangles, Nevada: U.S. Geological Survey Open-File Report 92-193, 14 p., 3 pls., scale 1:100,000. #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.