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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.

Sugarville area faults (Class A) No. 2437

Last Review Date: 1999-10-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: **Black, B.D., DuRoss, C.B., Hylland, M.D., McDonald, G.N., and Hecker, S., compilers, 1999, Fault number 2437, Sugarville area faults, 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 02:56 PM.**

Synopsis	Zone of recurrent late Quaternary faults 6 km northeast of Sugarville in the northern Sevier Desert.
Name comments	Oviatt's (1989) referred to these as the Intermountain Power Plant faults, but Hecker (1993 #642) renamed them for their location about 6 km northeast of Sugarville. **Fault ID:** Refers to fault number 8-22 of Hecker (1993 #642).
County(s) and	MILLARD COUNTY, UTAH

State(s)	MILLARD COUNTY, UTAH
Physiographic province(s)	BASIN AND RANGE
Reliability of location	Good Compiled at 1:24,000 scale. *Comments:* Mapped or discussed by Dames and Moore (1978 #4596), Ertec Western, Inc. (Schell, 1981 #2843), Oviatt (1989 #381), Oviatt and others (1994 #4542), and Hintze and Davis (in preparation #4539). Fault traces from mapping of Dames and Moore (1978 #4596).
Geologic setting	Short, northeast-trending zone of normal faults or fractures in the northern Sevier Desert. Surficial geology of the area is dominated by deposits of Pleistocene Lake Bonneville.
Length (km)	5 km.
Average strike	N33°E
Sense of movement	Normal
Dip Direction	NW; SW *Comments:* Mainly NW and SE, with sparse W.
Paleoseismology studies	At the Intermountain Power Project (site 2437-1) about 6 km northeast of Sugarville, Dames & Moore (1978 #4596) excavated eight, and logged five, trenches across two suspected fault-related lineaments (referred to as the northwestern fault zone and southeastern fault). Liquefaction features, including injection dikes and distorted bedding, were observed in one of the trenches across the southeastern fault. Trenches across the northwestern fault zone revealed stratigraphic evidence for two distinct surface-faulting events as well as complex faulting relationships. No soil age estimates were obtained to constrain earthquake timing.
Geomorphic expression	Lineaments and subtle relief in lake deposits. Parallel tonal lineaments 10 kilometers to the north of the zone may be related faults, but are not mapped. Trenching revealed underlying faults, but their relation to deeper structures is unknown. A minimum throw of 3.8 meters across one of the faults, combined with the short apparent rupture length, suggests that numerous small-

	displacement events occurred along the fault zone.
Age of faulted surficial deposits	Pliocene to Holocene.
Historic earthquake	
Most recent prehistoric deformation	latest Quaternary (<15 ka) *Comments:* The faults cut Bonneville and post-Bonneville deposits. Crosscutting stratigraphic relations indicate at least two events occurred along the fault zone.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr
Date and Compiler(s)	1999 Bill D. Black, Utah Geological Survey Christopher B. DuRoss, Utah Geological Survey Michael D. Hylland, Utah Geological Survey Greg N. McDonald, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#4596 Dames and Moore, 1978, Phase II—Preliminary geotechnical studies, proposed powerplant, lower Sevier River area, Utah: Los Angeles, report for Intermountain Power Project, Job Nos. 10629-00206 and 10629-003-06, 45 p., scale 1:24,000. #642 Hecker, S., 1993, Quaternary tectonics of Utah with emphasis on earthquake-hazard characterization: Utah Geological Survey Bulletin 127, 157 p., 6 pls., scale 1:500,000. #381 Oviatt, C.G., 1989, Quaternary geology of part of the Sevier Desert, Millard County, Utah: Utah Geological and Mineral Survey Special Studies 70, 41 p., 1 pl., scale 1:100,000. #4542 Oviatt, C.G., Sack, D., and Felger, T.J., 1994, Quaternary geologic map of the Old River Bed and vicinity, Millard, Juab, and Tooele Counties, Utah: Utah Geological Survey Map 161, 24 p. pamphlet, scale 1:62,500.

	#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.