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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.

Vernon Hills fault zone (Class A) No. 2406

Last Review Date: 1999-10-01

Compiled in cooperation with the Utah Geological Survey

citation for this record: **Black, B.D., and Hecker, S., compilers, 1999, Fault number 2406, Vernon Hills 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 02:55 PM.**

Synopsis	Poorly understood zone of late Quaternary faults on the east side of the Vernon Hills. Faulting has formed short, discontinuous east-facing fault scarps on alluvium and bedrock.
Name comments	**Fault ID:** Refers to fault number 7-12 of Hecker (1993 #642).
County(s) and State(s)	TOOELE COUNTY, UTAH
Physiographic province(s)	BASIN AND RANGE

Reliability of location	Poor Compiled at 1:250,000 scale. *Comments:* Fault traces from 1:250,000-scale mapping of Barnhard and Dodge (1988 #429).
Geologic setting	Several short northwest-trending normal faults along the east side of the Vernon Hills in southern Rush Valley. Surficial geology of Rush Valley is dominated by deposits of Pleistocene Lake Bonneville and alluvial-fan sediments.
Length (km)	4 km.
Average strike	N22°W
Sense of movement	Normal
Dip Direction	NE
Paleoseismology studies	
Geomorphic expression	Short, discontinuous east-facing fault scarps on alluvium and bedrock. Along most of the zone, bedrock is on both sides of the fault or juxtaposed against alluvium. At its northern end, the fault displaces pre-Lake Bonneville alluvium, but post-Lake Bonneville alluvium is undisturbed along the fault.
Age of faulted surficial deposits	Late Pleistocene alluvium and bedrock.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Scarp profiling by Barnhard and Dodge (1988 #429) suggests a pre-Bonneville age (>16.8 ka) for the Vernon Hills fault zone.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr

Date and Compiler(s)	1999 Bill D. Black, Utah Geological Survey Suzanne Hecker, U.S. Geological Survey
References	#429 Barnhard, T.P., and Dodge, R.L., 1988, Map of fault scarps formed on unconsolidated sediments, Tooele 1° x 2° quadrangle, northwestern Utah: U.S. Geological Survey Miscellaneous Field Studies Map MF-1990, 1 sheet, scale 1:250,000. #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.