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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.

Gyp Pocket graben and faults (Class A) No. 1001

Last Review Date: 1997-04-16

Compiled in cooperation with the Arizona Geological Survey

citation for this record: **Pearthree, P.A., compiler, 1997, Fault number 1001, Gyp Pocket graben and 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 02:19 PM.**

Synopsis	The Gyp Pocket faults form narrow, shallow, symmetric grabens southwest of a major convex bend of the Hurricane fault zone on the Shivwitz Plateau. They are part of a group of fault zones on the Shivwitz Plateau that appear to be subsidiary to the Hurricane fault zone. Paleozoic rocks are displaced between 25 and 50 m along most of the grabens, but displacement increases to about 110 m near the northern end of these structures. The margins of the grabens are moderately steep, linear escarpments formed on Paleozoic bedrock, and there is extensive young fan deposition at the base of these escarpments. Upper Pleistocene to Holocene fan

	deposits are evidently faulted in a few places, whereas younger Holocene fan deposits are not faulted.
Name comments	Mapped by Hamblin and Best (1970 #2070); remapped and named by Menges and Pearthree (1983 #2073). The geology in the area of the faults was mapped by Billingsley (1992 #2071; 1992 #2072).
County(s) and State(s)	MOHAVE COUNTY, ARIZONA
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Faults are mapped at 1:24,000 scale, transferred to 1:250,000-scale topographic map for digitization.
Geologic setting	The Gyp Pocket grabens are narrow, shallow, symmetric grabens located southwest of a major convex bend of the Hurricane fault zone [998] on the Shivwitz Plateau. The graben faults and other fault zones in this area appear to be subsidiary to the Hurricane fault zone. Paleozoic rocks are displaced 120 m or less, as measured from the graben shoulders to the valley bottoms.
Length (km)	12 km.
Average strike	N6°W
Sense of movement	Normal *Comments:* Inferred from topography and regional geologic relations.
Dip Direction	NE; SW; E; W *Comments:* Dip directions are inferred from fault trends, topography, and regional relations.
Paleoseismology studies	
Geomorphic expression	The faults are expressed as moderately steep, linear escarpments on Paleozoic bedrock, with extensive young fan deposition at the

	base of the escarpment. Scarps on alluvium exist locally along these faults, but none have been studied in detail.
Age of faulted surficial deposits	Paleozoic, late Pleistocene to Holocene. Upper Pleistocene to Holocene fan deposits are evidently faulted in a few places (Billingsley, 1992 #2071; 1992 #2072). Younger Holocene fan deposits are not faulted.
Historic earthquake	
Most recent prehistoric deformation	late Quaternary (<130 ka) *Comments:* Quaternary deposits estimated to be Pleistocene and upper Pleistocene to Holocene in age are evidently faulted in a few places, but these age estimates are very rough. The steepness and linearity of the graben escarpments are consistent with late Quaternary activity. However, younger Holocene fan deposits are not faulted. Holocene and post glacial activity is possible, but has not been demonstrated conclusively.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No slip rate values have been determined. However, the faults probably have a low rate owing to the lack of large (10 m or bigger) noticeable scarps on deposits of upper Pleistocene age.
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#2071 Billingsley, G.H., 1992, Geologic map of the Gyp Pocket quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 92-412, 17 p., 1 pl., scale 1:24,000. #2072 Billingsley, G.H., 1992, Geologic map of the Hole-N-Wall quadrangle, northern Mohave County, Arizona: U.S. Geological Survey Open-File Report 92-432, 15 p., 1 pl., scale 1:24,000. #2070 Hamblin, W.K., and Best, M.G., eds., 1970, The western Grand Canyon district—Guidebook to the geology of Utah, n. 23: Salt Lake City, Utah Geological Society, 156 p.

	#2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000.