

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](#).

unnamed faults of Pinto Mesa (Class A) No. 2277

Last Review Date: 1997-09-04

Compiled in cooperation with the Colorado Geological Survey

citation for this record: Widmann, B.L., compiler, 1997, Fault number 2277, unnamed faults of Pinto Mesa, 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 03:02 PM.

Synopsis

This fault is on the southwest margin of the Uncompahgre Uplift. Evidence for Quaternary movement on this fault was cited in Witkind (1976 #2792) based on personal communication with Fred Cater. Based on the timing of abandonment of Unaweep Canyon, Cater (1966 #2671) indicated uplift of the Uncompahgre Plateau began in the mid-Pliocene and continued into the Pleistocene, resulting in as much as 640 m of differential uplift. Despite the lack of evidence of faulted Quaternary deposits along this unnamed fault, it has been classified as a Quaternary fault (Howard and others, 1978 #312; Kirkham and Rogers, 1981

	#792; Colman, 1985 #1953; Lettis and others, 1996 #4453), and no references have been published that refute this age assignment.
Name comments	<p>This fault consists of five northwest-trending strands on the southwest flank of the Uncompahgre Uplift. The fault extends from the southwest flank of Pinon Mountain, past Tabequache Creek to Pinto Mesa, and continues southeast to Cottonwood Creek.</p> <p>Fault ID: Fault 83 in Kirkham and Rogers (1981 #792), fault 353 in Witkind (1976 #2792), and fault number Q27 of Widman and others (1998 #3441).</p>
County(s) and State(s)	MONTROSE COUNTY, COLORADO
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	<p>Good Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> The fault was mapped at a scale of 1:250,000 by Williams (1964 #2789) and Lettis and others (1996 #4453). The trace used herein is from Lettis and others (1996 #4453).</p>
Geologic setting	This fault is on the southwest flank of the Uncompahgre Uplift. The Uncompahgre Uplift is a northwest-trending, east-tilted fault block. This fault is a high-angle, down to the southwest.
Length (km)	20 km.
Average strike	N43°W
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Kirkham and Rogers (1981 #792) and Witkind (1976 #2792) showed this as a normal fault.</p>
Dip Direction	SW
Paleoseismology studies	
Geomorphic expression	Geomorphic indicators of youthful faulting have not been reported.

Age of faulted surficial deposits	The youngest deposits offset by the fault are the Cretaceous Dakota Sandstone and Burro Canyon Formation; Quaternary deposits conceal the fault (Williams, 1964 #2789). The fault lies primarily in Jurassic and Cretaceous bedrock with less than 5 percent of the fault extending beneath Quaternary deposits.
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) <i>Comments:</i> Despite a lack of evidence for offset in Quaternary deposits, faults associated with the Uncompahgre Uplift are often considered to be Quaternary. Evidence for Quaternary movement as cited in Witkind (1976 #2792) as a personal communication with Fred Cater. Based on the timing of abandonment of Unaweep Canyon, Cater (1966 #2671) indicated uplift of the Uncompahgre Plateau began in the mid-Pliocene and continued into the Pleistocene, resulting in as much as 640 m of differential uplift. There is no other published evidence that Quaternary deposits are offset by this structure. Despite the lack of evidence of faulted Quaternary deposits along this unnamed fault, it has been classified as a Quaternary fault (Howard and others, 1978 #312; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953; Lettis and others, 1996 #4453), and no references have been published that refute this age assignment.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> Lettis and others (1996 #4453) calculated a slip rate of <0.2 mm/yr based on a scarp height of 80 m and an age of about 500 ka or older.
Date and Compiler(s)	1997 Beth L. Widmann, Colorado Geological Survey
References	#2671 Cater, F.W., Jr., 1966, Age of the Uncompahgre Uplift and Unaweep Canyon, west-central Colorado: U.S. Geological Survey Professional Paper 550-C, 86-92 p. #1953 Colman, S.M., 1985, Map showing tectonic features of late Cenozoic origin in Colorado: U.S. Geological Survey Miscellaneous Geologic Investigations I-1566, 1 sheet, scale 1:1,000,000.

#312 Howard, K.A., Aaron, J.M., Brabb, E.E., Brock, M.R., Gower, H.D., Hunt, S.J., Milton, D.J., Muehlberger, W.R., Nakata, J.K., Plafker, G., Prowell, D.C., Wallace, R.E., and Witkind, I.J., 1978, Preliminary map of young faults in the United States as a guide to possible fault activity: U.S. Geological Survey Miscellaneous Field Studies Map MF-916, 2 sheets, scale 1:5,000,000.

#792 Kirkham, R.M., and Rogers, W.P., 1981, Earthquake potential in Colorado: Colorado Geological Survey Bulletin 43, 171 p., 3 pls.

#4453 Lettis, W., Noller, J., Wong, I., Ake, J., Vetter, U., and LaForge, R., 1996, Draft report, Seismotectonic evaluation of Colorado River storage project-Crystal, Morrow Point, Blue Mesa dams, Smith Fork project-Crawford dam, west-central Colorado: Technical report to U.S. Bureau of Reclamation, Denver, Colorado, 177 p.

#2731 Perry, T.W.V., 1989, Tectonic inference and computer simulation in stream longitudinal profile evolution, Unaweep Canyon and vicinity, Colorado and Utah: Geological Society of America Abstracts with Programs, v. 21, no. 6, p. 269.

#3441 Widmann, B.L., Kirkham, R.M., and Rogers, W.P., 1998, Preliminary Quaternary fault and fold map and database of Colorado: Colorado Geological Survey Open-File Report 98-8, 331 p., 1 pl., scale 1:500,000.

#2789 Williams, P.L., 1964, Geology, structure, and uranium deposits of the Moab quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Geologic Investigations I-360.

#2792 Witkind, I.J., 1976, Preliminary map showing known and suspected active faults in Colorado: U.S. Geological Survey Open-File Report 76-154.

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