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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.

Bangs Canyon fault (Class A) No. 2256

Last Review Date: 1997-06-11

Compiled in cooperation with the Colorado Geological Survey

citation for this record: **Widmann, B.L., compiler, 1997, Fault number 2256, Bangs Canyon 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 03:01 PM.**

Synopsis	The Bangs Canyon fault lies on the northeast flank of the Uncompahgre Uplift south of Grand Junction. Williams (1964 #2789) mapped Quaternary deposits abutting against the fault, but Lohman, (1965 #2719) showed this fault as being covered by Quaternary landslide deposits. Evidence for Quaternary movement on the fault was cited in Witkind (1976 #2792) based on personal communication with Fred Cater. Based on the timing of abandonment of Unaweep Canyon by the Gunnison River, Cater (1966 #2671) indicated uplift 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 the Bangs Canyon fault, it has been

	classified as a Quaternary fault (e.g. Howard and others, 1978 #312; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953), and no references have been published that refute this age assignment.
Name comments	The Bangs Canyon fault is a northwest-trending fault on the northeast margin of the Uncompahgre Uplift. The fault lies between the towns of Whitewater and Glade Park and is perpendicular to Bangs Canyon. It extends southeast from the Ladder Creek monocline (which is an extension of the Ladder Creek fault) and dies out and becomes the East Creek faulted monocline. Witkind (1976 #2792) mapped faults 2254-2256, 2258, 2260 and 2261 (numbers for this database) as a single fault, which he referred to as the Glade Park fault. More detailed mapping by Lohman (1963 #2718; 1965 #2719) revealed that the faults are not connected at the surface. Lohman (1963 #2718) labeled fault 2256 as the Bangs Canyon fault. **Fault ID:** Fault 68 in Kirkham and Rogers (1981 #792), fault 282 in Witkind (1976 #2792), and fault number Q6 of Widman and others (1998 #3441).
County(s) and State(s)	MESA COUNTY, COLORADO
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* This fault was mapped at a scale of 1:31,680 by Lohman (1963 #2718; 1965 #2719) and 1:250,000 by Williams (1964 #2789). The trace used herein is from Lohman (1965 #2719).
Geologic setting	This fault is part of the northeast margin of the Uncompahgre Uplift south of Grand Junction. The Uncompahgre Uplift is a northwest-trending, east-tilted fault block. This fault is high-angle normal ,down to the northeast. This fault lies in a tectonically weakened area above the ancestral Garmesa and Douglass Creek fault zones (Stone, 1977 #2749).
Length (km)	6 km.

Average strike	N32°W
Sense of movement	Normal *Comments:* Heyman (1983 #2697) mapped this fault as down to the northeast on a northeast dipping-plane. Kirkham and Rogers (1981 #792) also described this as a normal fault.
Dip Direction	NE
Paleoseismology studies	
Geomorphic expression	Geomorphic indicators of youthful faulting have not been reported.
Age of faulted surficial deposits	Williams (1964 #2789) mapped Quaternary deposits as abutting against the fault, but Lohman (1963 #2718; 1965 #2719) showed the fault as being overlain by unfaulted Quaternary landslide deposits. The Cretaceous Dakota and Burro Formations are the youngest deposits faulted according to Lohman (1963 #2718). About 95 percent of the fault lies in Paleozoic to lower Mesozoic bedrock, and the remaining 5 percent is concealed beneath landslide deposits (Lohman, 1963 #2718).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Quaternary deposits are generally absent in this area making it difficult to recognize Quaternary movement on the faults. Williams (1964 #2789) showed Quaternary deposits as abutting against the fault trace, while Lohman (1963 #2718; 1965 #2719) showed the fault as overlain by unfaulted Quaternary landslide deposits. Faults associated with the Uncompahgre Uplift are often considered to have experienced Quaternary movement. Evidence for Quaternary movement on the fault was cited in Witkind (1976 #2792) based on personal communication with Fred Cater. There is no other published evidence that Quaternary deposits are offset by this structure. Based on the timing of abandonment of Unaweep Canyon by the Gunnison River, Cater (1966 #2671) indicated uplift 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 for Quaternary movement, the Bangs Canyon fault has been classified as a

	Quaternary fault (e.g. Howard and others, 1978 #312; Kirkham and Rogers, 1981 #792; Colman, 1985 #1953), and no references have been published that refute this age assignment.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* Widmann and others (1998 #3441) placed this structure within the <0.2 mm/yr slip-rate category based on calculations of an overall uplift rate of 0.4 m/1000 yr since 1.8 Ma for the Uncompahgre Uplift (Perry, 1989 #2731).
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. #2718 Lohman, S.W., 1963, Geologic map of Grand Junction area, Colorado: U.S. Geological Survey Miscellaneous Geologic Investigations I-404. #2719 Lohman, S.W., 1965, Geology and artesian water supply of the Grand Junction area, Colorado: U.S. Geological Survey Professional Paper 451, 149 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.

#2749 Stone, D.S., 1977, Tectonic history of the Uncompahgre Uplift, *in* Veal, H.K., ed., Exploration Frontiers of the central and southern Rockies: Rocky Mountain Association of Geologists, 1977 Field Conference Guidebook, p. 23-30.

#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.