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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.

unnamed fault near Dry Valley (Class A) No. 823

Last Review Date: 2002-12-03

citation for this record: **Personius, S.F., compiler, 2002, Fault number 823, unnamed fault near Dry Valley, 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 01:58 PM.**

Synopsis	This unnamed, down-to-the-west normal fault forms the Dry Valley Rim, a 100- t 300-m-high escarpment that bounds the eastern margin of Dry Valley in central Oregon. The fault offsets Pliocene to Miocene ash-flow tuffs, but no fault scarps i Quaternary deposits have been described along its trace.
Name comments	This fault was mapped by Walker and Repenning (1965 #3559) and Greene and c (1972 #3560); Pezzopane (1993 #3544), Geomatrix Consultants, Inc. (1995 #359 Madin and Mabey (1996 #3575), and Weldon and others (2002 #5648) include th fault in their compilations of Quaternary faults in Oregon.
County(s) and State(s)	HARNEY COUNTY, OREGON
Physiographic province(s)	BASIN AND RANGE COLUMBIA PLATEAU

Reliability of location	Good Compiled at 1:250,000 scale. *Comments:* Location of fault from ORActiveFaults (http://www.oregongeology.org/arcgis/rest/services/Public/ORActiveFaults/MapS downloaded 06/02/2016) attributed to 1:250,000-scale mapping of Walker and Repenning (1965 #3559) and Greene and others (1972 #3560).
Geologic setting	This north-trending, down-to-the-west normal fault lies at the northern boundary Basin and Range province in southeastern Oregon, just south of the Brothers faul zone. The area is underlain by Pliocene to Miocene ash-flow tuffs (Walker and Repenning, 1965 #3559; Greene and others, 1972 #3560; Walker and MacLeod, 1 #3646).
Length (km)	19 km.
Average strike	N21°E
Sense of movement	Normal *Comments:* This fault is mapped as a normal or high-angle fault (Walker and Repenning, 1965 #3559; Green and others, 1972 #3560; Walker and MacLeod, 19 #3646; Pezzopane, 1993 #3544).
Dip Direction	W
Paleoseismology studies	
Geomorphic expression	The unnamed Dry Valley fault is marked by a prominent, 100- to 300-m-high escarpment (Dry Valley Rim) that separates the eastern margin of Dry Valley fror volcanic plateau consisting of Pliocene to Miocene ash flow tuffs (Walker and Repenning, 1965 #3559; Greene and others, 1972 #3560; Walker and MacLeod, 1 #3646). No fault scarps on Quaternary deposits have been described along its trac
Age of faulted surficial deposits	The unnamed Dry Valley fault forms a prominent escarpment primarily in lower Pliocene to upper Miocene ash-flow tuffs that have radiometric ages of 4–10 Ma (Walker and MacLeod, 1991 #3646).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:* Pezzopane (1993 #3544) used airphoto analysis to infer Quaternary (- Ma) displacement on the unnamed Dry Valley fault, and subsequent compilations

	(Geomatrix Consultants Inc., 1995 #3593; Madin and Mabey, 1996 #3575; Weldo others, 2002 #5648) also show the fault as active in the Quaternary (<1.6–1.8 Ma Madin and others (1996 #3479) map the southern half of the fault as age uncertai
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr *Comments:* No published slip rates are available for the unnamed Dry Valley faul However, the fault is marked by a 300-m-high escarpment in 4–10 Ma volcanic r Such slip data indicate low rates of long-term slip.
Date and Compiler(s)	2002 Stephen F. Personius, U.S. Geological Survey
References	#3593 Geomatrix Consultants, Inc., 1995, Seismic design mapping, State of Oreg Technical report to Oregon Department of Transportation, Salem, Oregon, under Contract 11688, January 1995, unpaginated, 5 pls., scale 1:1,250,000. #3560 Greene, R.C., Walker, G.W., and Corcoran, R.E., 1972, Geologic map of tl Burns quadrangle, Oregon: U.S. Geological Survey Miscellaneous Geologic Investigations I-680, 2 sheet, scale 1:250,000. #3575 Madin, I.P., and Mabey, M.A., 1996, Earthquake hazard maps for Oregon: of Oregon, Department of Geology and Mineral Industries Geological Map Serie GMS-100, 1 sheet. #3479 Madin, I.P., Ferns, M.F., Langridge, R., Jellinek, A.M., and Priebe, K., 19 Final report to Bonneville Power Administration U.S. Department of Energy Port General Electric Company—Geothermal resources of southeast Oregon: State of Oregon, Department of Geology and Mineral Industries Open-File Report OFR-0 4, 41 p., 6 pls. #3544 Pezzopane, S.K., 1993, Active faults and earthquake ground motions in Or Eugene, Oregon, University of Oregon, unpublished Ph.D. dissertation, 208 p. #3646 Walker, G.W., and MacLeod, N.S., 1991, Geologic map of Oregon: U.S. Geological Survey, Special Geologic Map, 2 sheets, scale 1:500,000. #3559 Walker, G.W., and Repenning, C.A., 1965, Reconnaissance geologic map Adel quadrangle, Lake, Harney, and Malheur Counties, Oregon: U.S. Geological Survey Miscellaneous Geologic Investigations I-446, 1 sheet, scale 1:250,000. #5648 Weldon, R.J., Fletcher, D.K., Weldon, E.M., Scharer, K.M., and McCrory,

	2002, An update of Quaternary faults of central and eastern Oregon: U.S. Geolog Survey Open-File Report 02-301 (CD-ROM), 26 sheets, scale 1:100,000.