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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.

Oak Ridge fault, mid-Channel structure (Class A) No. 138

Last Review Date: 2006-07-18

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Synopsis	The Oak Ridge fault, mid-Channel structure is a left-oblique blind reverse fault th moderately south (~45°) and offsets Quaternary sediment.
Name comments	
County(s) and State(s)	VENTURA COUNTY, CALIFORNIA
Physiographic province(s)	PACIFIC BORDER
Reliability of location	Poor Compiled at 1: scale. *Comments:* Location of fault from Qt_flt_ver_3-0_Final_WGS84_polyline.shp (F

	W.A., written communication to K.Haller, August 15, 2017) attributed to Cao and (2003).
Geologic setting	The structural interpretation of the offshore Oak Ridge fault is controversial beca and Yeats (1995) described reverse motion along this part of the fault whereas Sh Suppe (1994) proposed that instead of being a fault, the offshore Oak Ridge trend active kink band developed above the deep (3–5 km) Lower Pitas Point-Montalvo [492] and Upper Pitas Pitas Point-North Channel fault zone [180]. Further contro involves the sense of structural vergence. The Oak Ridge fault of Huftile and Yea verges northward whereas Shaw and Suppe (1994) propose that the kink band wi Oak Ridge trend results from southward vergence. See discussions in Stone (199 others (1996) and Yeats (1998). The onshore Oak Ridge fault forms the south boundary of the Ventura Basin (Yea 1988). This reverse fault extends offshore, west of this basin, to form the Mid Ch structure under the Santa Barbara Channel. In this trend the Oak Ridge dips steep shallow depth (>3 km) but moderately (~45˚) at greater depth (Redin and others, 2005 #8474; Sorlien and others, 2000). Sorlien and others (2000) derive structura indicate that displacement along this fault in the Mid Channel trend is left-oblique
Length (km)	41 km.
Average strike	270
Sense of movement	Reverse
Dip	45˚ S. *Comments:* 45˚ S. at depths > 3 km (Sorlien and others, 2000; Redin and others, 2
Paleoseismology studies	
Geomorphic expression	A bathymetric high called the Mid-Channel trend extends along the fault's trace.
Age of faulted surficial deposits	The fault offsets Quaternary sediment (Redin and others, 2005 #8473, 2005 #847 and others, 2000).
Historic earthquake	
Most recent prehistoric deformation	undifferentiated Quaternary (<1.6 Ma) *Comments:*

Recurrence interval	
Slip-rate category	Between 1.0 and 5.0 mm/yr *Comments:* Slip rate is unconstrained, but may be similar to the slip along the Oa fault to the east, *i.e.*, about 8 mm/yr left lateral oblique (Meade and Hager, 2005).
Date and Compiler(s)	2006 Michael A. Fisher, U.S. Geological Survey
References	#7851 Cao, T., Bryant, W.A., Rowshandel, B., Branum, D., and Wills, C.J., 2003 2002 California probabilistic seismic hazard maps, June 2003: California Geolog web page http://www.consrv.ca.gov/CGS/rghm/psha/fault_parameters/pdf/2002_CA_Hazar #8149 Huftile, G.J., and Yeats, R.S., 1995, Convergence rates across a displacem zone in the western Transverse Ranges, Ventura Basin, California: Journal of Geo Research, v. 88, no. B2, p. 2043–2067. #8394 Meade, B.J., and Hager, B.H., 2005, Block models of crustal motion in sou California constrained by GPS measurements: Journal of Geophysical Research, doi:10.1029/2004JB003209, 19 p. #8473 Redin, T., Kamerling, M., and Forman, J., 2005, Santa Barbara Channel st correlation section CS35: Bakersfield, California, Pacific Section AAPG, 1 sheet #8474 Redin, T., Kamerling, M., and others, 2005, Santa Barbara Channel structu correlation section CS-32, *in* Hopps, T. E., ed.: Bakersfield, California, American of Petroleum Geologists, Pacific Section, 1 sheet. #8475 Shaw, J.H., and Suppe, J., 1994, Active faulting and growth folding in the Santa Barbara Channel: Geological Society America Bulletin, v. 106, p. 607–626 #8466 Shaw, J., Hook, S.C., and Suppe, J., 1996, Structural trend analysis by axia mapping, Reply: American Association Petroleum Geologists Bulletin, v. 80, p. 7 #8468 Sorlien, C.C., Gratier, J.P., Luyendyk, B.P., Hornafius, J.S., and Hopps, T., restoration of folded and faulted late Cenozoic strata across the Oak Ridge fault, offshore Ventura Basin, California: Geological Society of America Bulletin, v. 11 1090. #8469 Stone, D.S., 1996, Structural trend analysis by axial surface mapping: Disc American Association Petroleum Geologists Bulletin, v. 80, p. 770–779.

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