

2430, HOUSE RANGE (WEST SIDE) FAULT

Structure number: 2430.

Comments: Hecker's (1993) fault number 8-10.

Structure name: House Range (west side) fault.

Comments:

Synopsis: Moderately understood Holocene to late Quaternary fault on the west side of the House Range.

Date of compilation: 10/99.

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State: Utah.

County: Millard.

1° x 2° sheet: Delta.

Province: Basin and Range.

Reliability of location: Good.

Comments: Mapped or discussed by Piekarski (1980), Ertec Western, Inc. (1981), Sack (1990), and Hintze and Davis (in preparation). Mapping from Ertec Western, Inc. (1981).

Geologic setting: Range-front fault along the west side of the House Range in eastern Tule Valley. The House Range is the centermost of three north-trending mountain ranges in west-central Utah, including the Thomas Range to the east and the Confusion Range to the west. The mountains expose mainly Paleozoic sedimentary rocks. Unconsolidated deposits in the valley are mainly lake sediments and alluvium.

Sense of movement: N.

Comments:

Dip: No data.

Comments:

Dip direction: W.

Geomorphic expression: Generally north-trending fault along the western base of the House Range. The fault forms scarps in transgressive Lake Bonneville deposits and post-lake alluvium. The most recent event on the fault displaces these sediments 1.4 meters down to the west. Seismic reflection data suggest that the fault merges with or is truncated by a low-angle detachment fault at a depth less than about 5 kilometers (Allmendinger and others, 1983; Smith and Bruhn, 1984).

Age of faulted deposits: Holocene to late Quaternary.

Paleoseismology studies: None.

Timing of most recent paleoevent: (2) Latest Quaternary (<15 ka).

Comments: Piekarski (1980) and Sack (1990) estimate a minimum-limiting age of 12 ka based on general slope-age considerations, although Ertec Western, Inc. (1981) classified the fault as Holocene based on the presence of scarps on post-Bonneville alluvial fans. Sack (1990) reports faulted transgressive shorelines above the level of the Provo shoreline provide an estimated maximum-limiting age for faulting of 19 ka.

Recurrence interval: No data.

Comments:

Slip rate: (D) <0.2 mm/yr.

Comments:

Length: End to end (km): 45

Cumulative trace (km): 29

Average strike (azimuth): N0°W

REFERENCES

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- Ertec Western, Inc., 1981, MX siting investigation, faults and lineaments in the MX siting region, Nevada and Utah: Long Beach, California, unpublished consultant's report no. E-TR-54 for U.S. Air Force, volume I, 77 p.; volume II, variously paginated.
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- Hintze, L.F., and Davis, F.D., in preparation, *Geology of Millard County, Utah*: *Utah Geological Survey Bulletin*, scale 1:100,000.
- Piekarski, L.L., 1980, Relative age determination of Quaternary fault scarps along the southern Wasatch, Fish Springs, and House Ranges: *Brigham Young University Geology Studies*, v. 27, pt. 2, p. 123-139.
- Sack, Dorothy, 1990, *Geologic map of the Tule Valley, west-central Utah*: *Utah Geological and Mineral Survey Map* 124, 26 p. pamphlet, scale 1:100,000.
- Smith, R.B., and Bruhn, R.L., 1984, Intraplate extensional tectonics of the western U.S. Cordillera – Inferences on structural style from seismic-reflection data, regional tectonics and thermal-mechanical models of brittle-ductile deformation: *Journal of Geophysical Research*, v. 89, no. B7, p. 5733-5762.