GEOLOGIC MAP OF THE MISSOULA BASIN AND ADJACENT HIGHLANDS, MONTANA

QUATERNARY

Recent

Qa

Alluvium

Poorly sorted, unconsolidated silt, sand, and gravel on the flood plains of Ninemile Creek, the Clark Fork, and the Bitterroot River, and slope, gully, and stream wash associated with their tributaries

Pleistocene

Qoa

Older alluvium

A thin mantle of reworked Lake Missoula silt and poorly sorted, unconsolidated sand and gravel on low terraces marginal to the flood plains of the Clark Fork, the Bitterroot River, and their tributaries

Qgl

Glaciolacustrine deposits

Semiconsolidated varved clay and silt underlying the high terraces in the Missoula Valley; and coarse, poorly sorted, unconsolidated glacial debris in the Ninemile Valley; believed to have been deposited in glacial Lake Missoula

TERTIARY

Pliocene(?)

Ts

Sand and gravel

Well-bedded, well-sorted, unconsolidated channel deposits exposed in borrow pits near the mouth of Grant Creek, and north of Miller Creek; believed to have been deposited in high energy environments

Oligocene

Toa

Alluvial deposits

Semi- to well-consolidated conglomerate interstratified with incompetent beds of shale, coal and some volcanic ash; locally includes fossil plants; exposed in many areas on the northeast side of the Missoula Valley and locally in the Ninemile Valley

PRECAMBRIAN TO LOWER TERTIARY

Tp€b

Basement rocks

Undifferentiated sedimentary, metamorphic and igneous rocks underlying the valley fill and adjacent highlands

Geologic contact, dashed where inferred

Normal fault, (U) on upthrown side, (D) on downthrown side, dashed where inferred

Thrust fault, teeth on upthrown side, dashed where inferred

Translatory fault with strike-slip components, showing relative movement of downthrown block, dashed where inferred

Dip and strike of beds

Horizontal beds

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Geology by R. L. Konizeski, 1964

Faults south of Missoula Valley after F. W. Hall, 1964

Base compiled by U.S. Forest Service, 1959