STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
DONALD A. HULL, STATE GEOLOGIST

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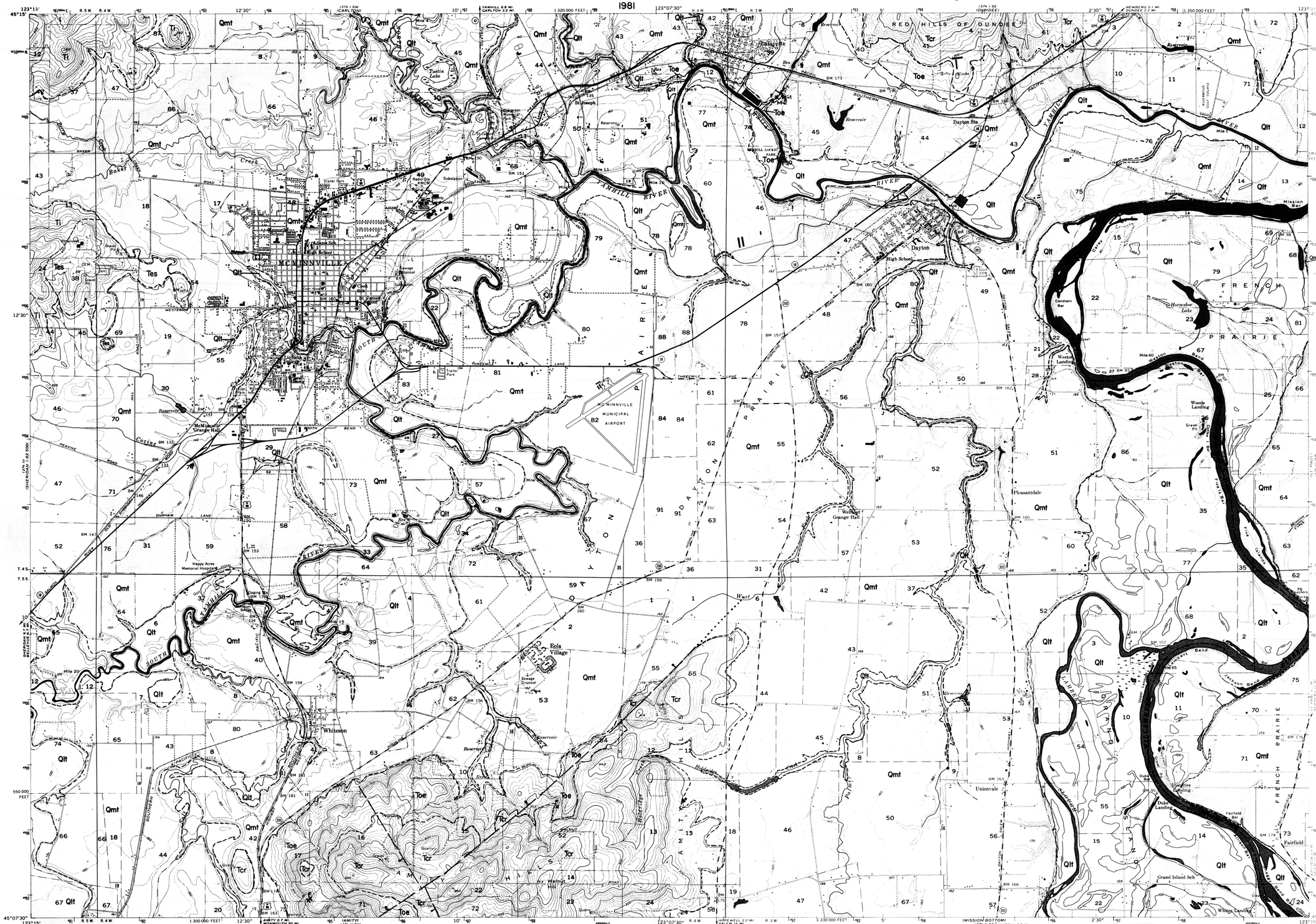
# PRELIMINARY GEOLOGIC MAP OF THE McMINNVILLE AND DAYTON QUADRANGLES, OREGON

By Michael E. Brownfield and Herbert G. Schlicker

1981




## TIME ROCK CHART

| | | | |
|---|---|---|---|
| CENOZOIC | QUATERNARY | Holocene, Pleistocene | Qlt, Qmt |
| | | | UNCONFORMITY |
| | TERTIARY | Miocene | Tcr |
| | | | UNCONFORMITY |
| | | Oligo. | Ti |
| | | Eocene | Toe, Tes |

## DESCRIPTION OF MAP UNITS

### SURFICIAL GEOLOGIC UNITS (HOLOCENE AND PLEISTOCENE)

Age ranges of individual units overlap

**Qlt** — Lower terrace deposits and alluvium: Mostly poorly sorted, unconsolidated to semiconsolidated deposits of clay, silt, sand, and fine to very coarse gravel; includes recent alluvium associated with Willamette River and its tributaries. Unit is 0-50 ft thick

**Qmt** — Middle terrace deposits: Poorly sorted, semiconsolidated deposits of clay, silt, sand, and fine to very coarse gravel; includes 10-50 ft of light-brown, massive to faintly bedded silt called Willamette Silt. Unit is 0-150 ft thick

### BEDROCK GEOLOGIC UNITS

**Tcr** — Columbia River Basalt Group (Miocene): Gray to black, dense, fine-grained to aphanitic, intersertal to ophitic, occastionally porphyritic, tholeiitic basalt. Individual flows range in thickness from 40-100 ft. Weathered flows consist of reddish-brown to grayish-brown, crumbly to medium-dense basalt. Some exposures are altered to laterite to depths of over 25 ft. Unit is 0-1,000 ft thick

**Toe** — Oligocene and Eocene sedimentary rock undivided (middle and lower Oligocene and upper Eocene: Tuffaceous marine sedimentary deposits consisting of two lithologic and faunal units; however, poor exposure in area west of Eola and Amity Hills prevents the division of these units. The older of these units is light-gray to tan, sandy, tuffaceous siltstone equivalent in age to early Oligocene to late Eocene Keasey Formation. The thickest section of lower Oligocene-upper Eocene sediments is exposed in sec. 31, T. 6 S., R. 4 W., where about 1,000 ft of strata is present. The younger unit, light-brown to gray, fine- to coarse-grained, tuffaceous sandstone and siltstone equivalent in age to middle Oligocene Pittsburg Bluff Formation, is approximately 1,350 ft thick. The lower and middle Oligocene sediments are equivalent to Eugene Formation of Hickman (1969); foraminiferal faunas for lower part of unit are assigned by McWilliams (1968) and McKeel (1980) to Refugian (Schenck and Kleinpell, 1936; Kleinpell, 1938) and upper Narizian (Mallory, 1959) stages, and mollusc an faunas are referred by Hickman (1969) to Keasey and Lincoln stages of Weaver and others (1944)

**Ti** — Intrusives (Oligocene?): Basalt and gabbro sills and dikes. Dark-gray, medium- to coarse-grained, poikilitic to subophitic gabbro consisting of 70 percent plagioclase ($Ab_{50}An_{50}$); 25 percent augite; and minor amounts of magnetite, chlorite, and zeolite crops out northwest of McMinnville. The gabbro weathers to light-yellow soil or to residual spheroidal masses

**Tes** — Eocene sedimentary and volcanic rock undivided (upper Eocene): Light-brown to white, tuffaceous siltstones and shale; interbedded pillow basalt, breccia, and tuff. Mapped as Nestucca Formation by Baldwin and others (1955) and McWilliams (1968, 1973). Foraminiferal faunas are assigned by McWilliams (1968, 1973) to upper Narizian stage of Mallory (1959); molluscan faunas are referred to upper Eocene (Tejon stage) by Baldwin and others (1955) and McWilliams (1968)

## GEOLOGIC SYMBOLS

Contact: Approximately located and inferred; contacts exposed only along stream beds or roads

Fault: Approximately located; dashed where inferred; dotted where concealed. Some faults inferred from aerial photos. Bar and ball on downthrown side

Strike and dip of beds

F x — Fossil locality: Megafossil locality from Hickman (1969) and this study

F x M-6 — Fossil locality: Microfossil locality from Baldwin and others (1955)

## REFERENCES


Baldwin, E.M., Brown, R.D., Jr., Gair, J.E., and Pease, M.H., Jr., 1955, Geology of the Sheridan and McMinnville quadrangles, Oregon: U.S. Geological Survey Oil and Gas Investigations Map OM-155.

Hickman, C.S., 1969, The Oligocene marine mollusCan fauna of the Eugene Formation in Oregon: University of Oregon, Museum of Natural History Bulletin no. 16, 112 p.

Kleinpell, R.M., 1938, Miocene stratigraphy of California: Tulsa, Okla., American Association of Petroleum Geologists, 450 p.

Mallory, V.S., 1959, Lower Tertiary biostratigraphy of the California Coast Ranges: Tulsa, Okla., American Association of Petroleum Geologists, 416 p.

McWilliams, R.G., 1968, Paleogene stratigraphy and biostratigraphy of central-western Oregon: Seattle, Wash., University of Washington doctoral dissertation, 140 p.

-------1973, Stratigraphic and biostratigraphic relationships of the Tyee and Yamhill formations in central-western Oregon: Oregon Department of Geology and Mineral Industries, Ore Bin, v. 35, no. 11, p. 169-186.

Schenck, H.G., and Kleinpell, R.M., 1936, Refugian stage of Pacific Coast Tertiary: American Association of Petroleum Geologists Bulletin, v. 20, no. 2, p. 215-225.

Weaver, C.E., and others (Western Cenozoic Subcommittee), 1944, Correlation of the marine Cenozoic formations of western North America: Geological Society of America Bulletin, v. 55, no. 5, p. 569-598.


Because of the lack of subsurface information within the quadrangles, a cross section was not constructed.

Control by USGS, USC&GS, and State of Oregon

Topography from aerial photographs by Kelsh plotter and by planetable surveys 1957. Aerial photographs taken 1954

Polyconic projection. 1927 North American datum
10,000-foot grid based on Oregon coordinate system, north zone
1000-meter Universal Transverse Mercator grid ticks, zone 10

SCALE 1:24000

CONTOUR INTERVAL 20 FEET
DASHED LINES REPRESENT 10 FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

UTM GRID AND 1970 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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Geology by H.G. Schlicker, 1979 and M.E. Brownfield, 1980-81.