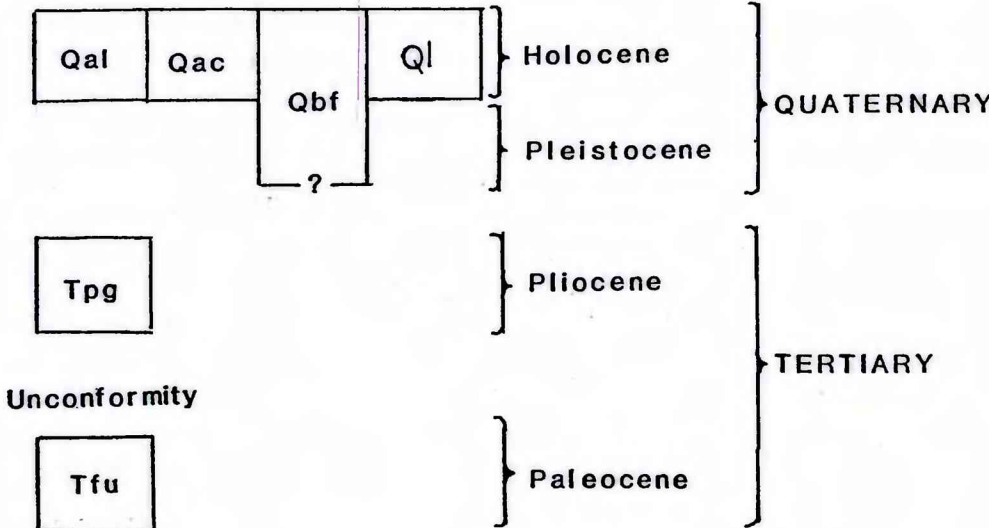


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- Qal Alluvium (Holocene)**—Light-brown and gray, well-stratified and well-sorted clay, silt, sand, and gravel. Unit limited to areas characterized by meander or braided patterns on aerial photographs. Surfaces of unit may be subject to occasional flooding. Thickness ranges from as much as 6 m (20 ft) under the flood plain of Redwater River to less than 3 m (10 ft) under flood plains of other streams
- Qac Alluvium and colluvium (Holocene)**—Light-brown and gray, poorly sorted and poorly stratified clay, silt, sand, and gravel deposited by slope wash and gravity processes. The color and texture of the colluvium reflect the parent material upslope. May interfinger with alluvium; includes small alluvial fans and much windblown clay, silt, and sand. Soil profiles range from well-developed to poorly developed. As much as 10 m (33 ft) thick, but generally less than 5 m (16 ft)
- Ql Lacustrine deposits (Holocene)**—Gray to dark-gray deposits of clay and silt in closed depressions. May contain windblown clay, silt, and sand. Surface of unit subject to occasional flooding. As much as 2 m (6 ft) thick
- Qbf Baked and fused bedrock (clinker) (Holocene and Pleistocene)**—Red to orange baked shale, sandstone, and siltstone of the Fort Union Formation that were heat-metamorphosed by combustion of lignite. Hard, dense, metamorphosed sediments are known as porcellanite; locally, sediments fused and melted to form black, vesicular, glassy, scoriaceous rock called buchite, which forms linings of chimneys and veins in porcellanite. As much as 10 m (33 ft) thick, but generally less than 5 m (16 ft)
- Tpg Sand and gravel, undivided (Pliocene)**—Light-brown to light-gray, well-stratified and well-sorted to poorly sorted sand and gravel. May contain some Pleistocene sand and gravel. Unit generally limited to altitudes less than 955 m (3,100 ft) but more than 767 m (2,520 ft). Thickness as much as 10 m (33 ft), but generally less than 3 m (10 ft)
- Tfu Tongue River Member (Collier and Knechtel, 1939) of Fort Union Formation (Paleocene)**—Yellowish-or light-brown shale and sandstone containing numerous lignite beds. Thickness estimated to be 122 m (400 ft)

- w Water
- Contact---Dashed where approximately located
- X Gravel pit
- Crest of yardang---Long narrow ridge resulting from wind erosion

REFERENCE

Collier, A.J., and Knechtel, M.N., 1939, The coal resources of McCone County, Montana: U.S. Geological Survey Bulletin 905, 80 p.

JOHNSON COULEE EAST 88-610	BROCKWAY NE 88-631	YOUNGQUIST MINE 88-627	CIRCLE 88-630	WOODWORTH HILL 88-626	OLSON COULEE NORTH 88-620	JOHNSON RESERVOIR NW 88-613	JOHNSON RESERVOIR NE 88-611
BEAUTY CREEK 88-636	BROCKWAY 88-623	CIRCLE SW 88-629	QUICK RESERVOIR 88-618	MOUNT ANTELOPE 88-616	OLSON COULEE SOUTH 88-621	DEER CREEK CHURCH 88-625	JOHNSON RESERVOIR 88-608
BERRY SCHOOL 88-632	WATKINS 88-621	BIG SHEEP MOUNTAIN NW 88-622	BEARHACK CREEK 88-634	DIAMOND SUTTE NW 88-607	UNION SCHOOL 88-617	LINDSAY 88-614	WOODROW 88-625
HEITZ SCHOOL 88-605	WATKINS SE 88-624	BIG SHEEP MTH 88-629	BECKER DAM 88-633	NORTH COULEE 88-619	DIAMOND SUTTE 88-635	LINDSAY SW 88-615	UPPER CRACKER BOX 88-612

INDEX TO QUADRANGLES IN THE CIRCLE 30' x 60' QUADRANGLE. MAPPED QUADRANGLE SHOWN BY STRIPES; NUMBERS ARE OPEN-FILE NUMBERS

GEOLOGIC MAP OF THE WATKINS QUADRANGLE, PRAIRIE
AND MCCONE COUNTIES, MONTANA

By

R.B. Colton, J.P. McGraw, and D.K. Bozeman

1994

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