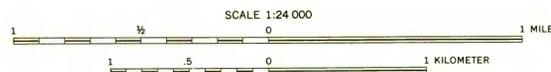




Base from U. S. Geological Survey

Geology mapped in 1980 and 1981

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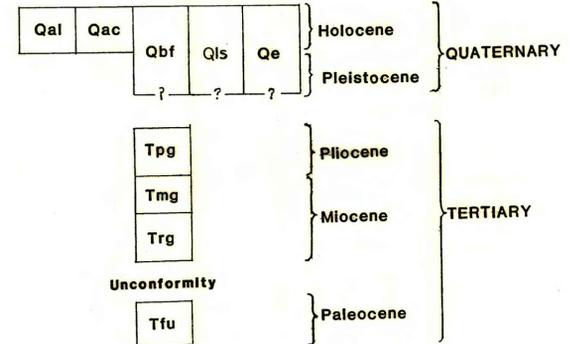
**GEOLOGIC MAP OF THE MOUNT ANTELOPE QUADRANGLE,  
McCONE AND DAWSON COUNTIES, MONTANA**

By

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**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. As much as 6 m (20 ft) thick under the flood plain of Buffalo Springs Creek to less than a few meters under flood plains of tributaries. Unit limited to areas characterized by meander or braided patterns on aerial photographs. Surface of unit may be subject to occasional flooding
- Qac Alluvium and colluvium (Holocene)**—Light-brown and gray, poorly sorted and well-stratified clay, silt, sand, and gravel deposited by gravity and slope wash. As much as 10 m (33 ft) thick, but generally less than 5 m (16 ft). Color and texture of colluvium reflect parent material upslope. May interfinger with alluvium; includes alluvial fans and much windblown clay, silt, and sand. Soil profiles range from well-developed to poorly developed
- Qbf Baked and fused bedrock (clinker) (Holocene to Pleistocene)**—Red to orange baked shale, sandstone, and siltstone of the Fort Union Formation that was 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 12 m (40 ft) thick, but generally less than 5 m (17 ft)
- Qe Eolium (Holocene to Pleistocene)**—Light- to moderate-brown windblown sand and silt deposits. As much as 2 m (6 ft) thick, but generally less than 1 m (3 ft)
- Qls Landslide deposit (Holocene to Pleistocene)**—Slumps and earthflows. Size of material in the deposits ranges from clay and silt to boulders. Thickness ranges from 1 m (3 ft) to 7.9 m (26 ft)
- Tpg Sand and gravel, undivided (Pliocene)**—Light-brown to light-gray, well-stratified and well-sorted sand and gravel. As much as 10 m (33 ft) thick, but generally less than 3 m (10 ft). Unit generally limited to altitudes between 930 m (3,060 ft) and 740 m (2,420 ft). May contain some Pleistocene sand and gravel
- Tmg Sand and gravel (Miocene)**—Light-brown to light-gray, well-stratified to poorly stratified, and well-sorted to poorly sorted sand and gravel. Thickness as much as 10 m (33 ft), but generally less than 6 m (20 ft). Unit generally limited to altitudes between 1,031 m (3,400 ft) and 912 m (3,000 ft). May include some Pliocene and Pleistocene sand and gravel
- Trg Rimroad Formation (Miocene)**—Light-brown to gray, well-sorted to poorly sorted, well-stratified to poorly stratified sand and gravel. Thickness 13 m (43 ft). The base of the formation is at an altitude of approximately 1,090 m (3,400 ft). May contain some small thin Pliocene and Pleistocene sand and gravel deposits. The Rimroad Gravel of Howard (1960) contains volcanic ash 7.1±1.4 million years old and much sand, silt, and clay in addition to gravel. Therefore, the name is revised to Rimroad Formation and the age is limited to Miocene. The age of the volcanic ash was determined by counting fission tracks in zircons from the ash by Nancy B. Naeser (Colton, Naeser, and Wilcox, 1983)
- Tfu Tongue River (Collier and Knechtel, 1939) Member of Fort Union Formation (Paleocene)**—Yellowish- or light-brown shale and sandstone containing numerous lignite beds. Estimated thickness more than 333 m (1,100 ft)

- w Water
- Contact—Dashed where approximately located
- ⌘ Abandoned coal mine
- ⌘ Gravel pit

**REFERENCES CITED**

- Collier, A.J., and Knechtel, M.N., 1939, The coal resources of McCone County, Montana: U.S. Geological Survey Bulletin 905, 80 p.
- Colton, R.B., Naeser, N.D., and Wilcox, R.E., 1983, Seven million-year-old ash on Missouri-Yellowstone River drainage divide near Circle, Montana: Geological Society of America Abstracts, Rocky Mountain and Cordilleran Sections, v. 15, no. 5, no. 24842, p. 414.
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