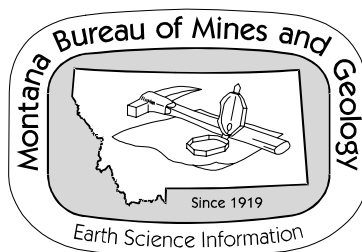


# GEOLOGIC MAP OF THE JORDAN 30' x 60' QUADRANGLE EASTERN MONTANA

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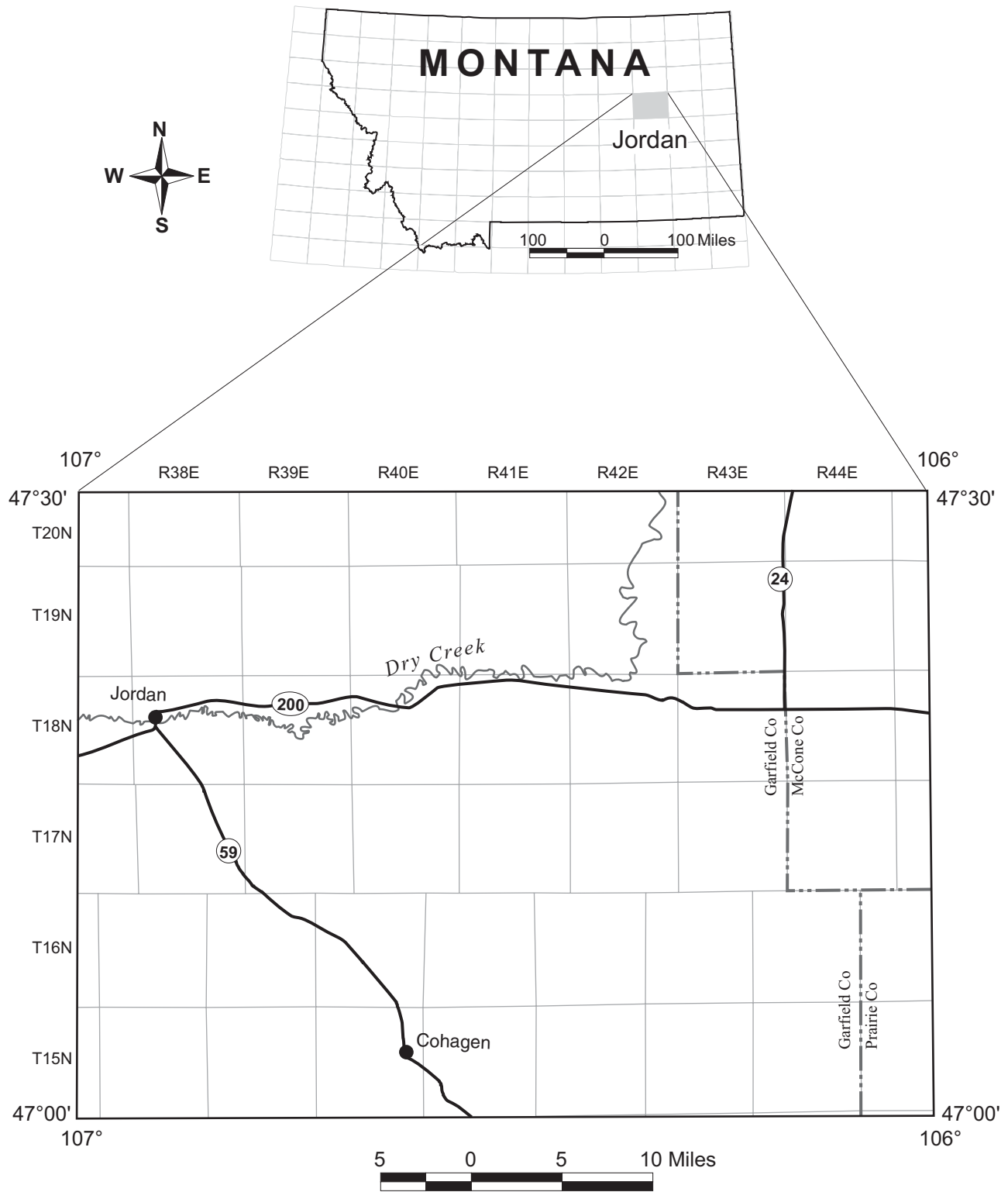
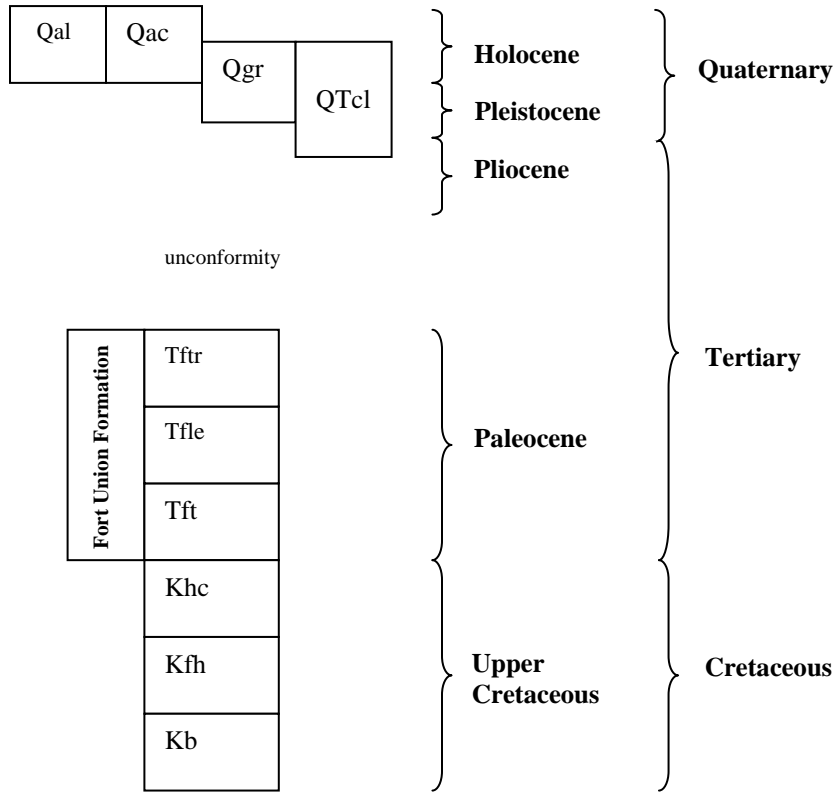


Figure 1. Location of Jordan 30'x60' quadrangle, eastern Montana.

CORRELATION DIAGRAM  
 JORDAN 30' x 60' QUADRANGLE



**MAP SOURCES AND INDEX OF 7.5' QUADRANGLES  
JORDAN 30' x 60' QUADRANGLE**

Jordan NW	Jordan NE	Bateman Coulee	Bateman Coulee NE	Hagen Gap	Frank Coulee	Fortyfour Coulee	Johnson Coulee West	47°30'
					1, 3	1, 3	1, 3	
Jordan	Jordan SE	Black John Coulee	Ada Creek	Maxwell Coulee	Coal Creek	Flowing Well	Ceme- tery Coulee	
					1	1, 3	1, 3	
Darby Buttes	Kirby Ranch	York Reser- voir	Cohagen NE	Hafla School	White- side Ranch	Hedstrom Lake NW	Hed- strom Lake	
						1	1	
Darby Buttes SW	Dice Dam	Cohagen SW	Cohagen	Calamity Coulee	Sleepy Hollow	Tree Coulee School	Hed- strom Lake SE	
4	4							47°

Numbers below correspond to numbers on index map above.

1. Collier, A.J., and Knechtel, M.M., 1939, Plate 1, scale 1:125,000.
2. Frahme, C.W., 1979, Plate 1, scale 1:48,000
3. Matson, R.E., 1970, Plate 1, scale 1:126,720.
4. Wilson, L.E., 1926, scale 1:31,680.

Entire map: Stoner, J.D., and Lewis, B.D., 1980  
Van Lewen, M.D., and King, N.J., 1971

**EXPLANATION**  
**JORDAN 30' x 60' QUADRANGLE**

- Qal Alluvium of modern channels and flood plains (Holocene)**—Light-brown, reddish-brown, and gray gravel, sand, silt, and clay deposited in modern stream and river channels and on flood plains. Clasts are well rounded to subrounded and well to poorly sorted. Deposits are poorly to well stratified. Thickness generally less than 15 ft but probably as much as 30 ft.
- Qac Alluvium and colluvium, undivided (Holocene and Pleistocene)**—Brown, yellowish-brown, grayish-brown, and light- to dark-gray sand, silt, and clay that overlies broad, generally flat-lying valley bottoms along underfit modern stream channels. Thickness probably less than 10 ft.
- Qgr Gravel (Pleistocene)**—Gray, brown, brownish-gray, or yellowish-gray, fine to coarse gravel, fine to coarse sand, and silt in patchy deposits. As much as 20 ft thick.
- QTcl Clinker (Holocene, Pleistocene, and Pliocene?)**—Red, pink, orange, black, and yellow, very resistant metamorphosed sandstone, siltstone, and shale of the Fort Union Formation. Rock was baked by natural burning of underlying coal, and locally collapsed into voids created by burning. Thickness from several inches to as much as 50 ft.
- Fort Union Formation (Paleocene)**
- Tftr Tongue River Member**—Yellow, orange, or tan, fine- to medium-grained sandstone with thinner interbeds of yellowish-brown, orange, or tan siltstone, light-colored mudstone and clay, brownish-gray carbonaceous shale, and coal. Clay dominantly nonswelling. Upper part of member was removed by erosion in map area. Exposed thickness of member as much as 250 ft.
- Tfle Lebo Member**—Gray, greenish-gray, smectitic shale and mudstone. Shale and mudstone contain lenses and interbeds of gray and yellow, very fine to medium-grained, poorly resistant sandstone. The Big Dirty coal bed and associated dark-gray or grayish-brown carbonaceous shales are at or near the base of the member. Thickness of member approximately 200 ft.
- Tft Tullock Member**—Light-yellow and light-brown, planar-bedded very fine- to medium-grained sandstone and subordinate gray shale with thin beds of dark-brown to black carbonaceous shale and coal. Thickness of member approximately 150 ft.
- Khc Hell Creek Formation (Upper Cretaceous)**—Dominantly gray, grayish-brown, and dusky-yellow, fine- to medium-grained, locally cross-bedded, locally calcium carbonate-cemented sandstone with subordinant orangish-brown sandstone, smectitic, silty, greenish-brown or gray shale and mudstone, and a few thin beds of carbonaceous shale. Brown calcium carbonate-cemented concretions with round,

irregular, or cylindrical shapes are typical in the fine-grained sandstone. Ferruginous clay pebbles are present locally. Thickness 250 ft.

- Kfh Fox Hills Formation (Upper Cretaceous)**—Light-brown or light-yellowish-gray, thin- to thick-bedded, micaceous, fine- to medium-grained sandstone with ferruginous concretions in the upper part and thin-bedded siltstone and silty shale in the lower part. Thickness 50 ft.
- Kb Bearpaw Shale (Upper Cretaceous)**—Dark-gray and dark-brownish-gray, bentonitic, fissile shale, and mudstone, with thin bentonite beds and calcareous concretions. Only uppermost part of formation exposed in map area. Exposed thickness 150 ft.

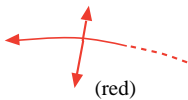
### MAP SYMBOLS



**Contact**—Dotted where concealed.



**Strike and dip of bedding**—Number indicates degree of dip.



**Anticline**—Showing trace of axial plane. Dotted where concealed.



**Fault**—Ball and bar on downthrown side. Dotted where concealed.

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