

# Surface Geology

## Taylor Quadrangle, North Dakota

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### EXPLANATION

#### QUATERNARY SYSTEM

##### RECENT

###### Manmade Features or Deposits

- g Gravel Pit
- d Clay Pit

##### OAHE FORMATION

- Qal Alluvium  
Brownish gray to black sand, silt, clay, and lenses of gravel; flood-plain deposits along recent drainages. Includes lower terrace deposits. Typically less than 50 feet thick.

##### RECENT/PLEISTOCENE

- Qls Landslide Deposits  
Variable mixture of strata and deposits that have slid to the base of steep slopes. Typically rotational slump blocks.

##### PLEISTOCENE

##### COLEHARBOR GROUP

- Qac Proglacial Channels  
These channels contain 50 to 200 feet of sand and gravel, silt, clay, and till (meltwater-channel fill). Overlain by Recent alluvium (Qal) of variable thickness. This map was created to distinguish between these very thick channel deposits and the moderate to thin deposits mapped as Qal.

#### TERTIARY SYSTEM

##### PLIOCENE(?)

- Tg Sand and Gravel  
Sand and gravel deposits that generally form sinuous ridges or cap low hills. Consist of medium to coarse grained sand and small cobbles primarily comprised of Fort Union concretions, Arikaree marlstone, Knife River flint, iron stone, and petrified wood. No granitic rock fragments were observed, suggesting the deposits are pre-Pleistocene. Ten to 20 feet thick in this area.

##### PALEOCENE

##### GOLDEN VALLEY FORMATION

- Tcbm Camels Butte Member  
Alternating beds of brown to grayish brown sandstone, siltstone, mudstone, claystone, and lignite. The coals are generally thinner than the underlying Sentinel Butte Formation and the siltstones and sandstones are micaceous.

- Tb dm Bear Den Member  
Brightly colored (white, orangish yellow to purple), kaolinitic claystone, mudstone, and sandstone typically overlain by a thin silicious bed (Taylor Bed) or lignite (Alamo Bluff). Forms vertical to near vertical slopes. This member is 20 to 25 feet in the area.

##### COLEHARBOR GROUP

- Tsb SENTINEL BUTTE FORMATION  
Alternating beds of grayish brown to gray sandstone, siltstone, mudstone, claystone, and lignite. The sandstones are fine to very fine grained, moderately to poorly cemented, and contain cross-stratification.

Based on elevations and known dips on the Golden Valley Formation or the underlying Sentinel Butte Formation, the Golden Valley Formation should be present in sections 21-28 (T.140N., R.93W.). However, no outcrops of the Bear Den Member were discovered anywhere along the escarpment in this area. Though, light yellow and dark brown sandstone, typical of the Camels Butte Member, is present in a roadcut in the north half of section 22, this sandstone is not micaceous which suggests it occurs within the Sentinel Butte Formation. A northeast-trending fault or fold may be present in sections 29 and 32 (T.140N., R.93W.).

#### Geologic Symbols

- Known contact between two geologic units
- Approximate contact between two geologic units

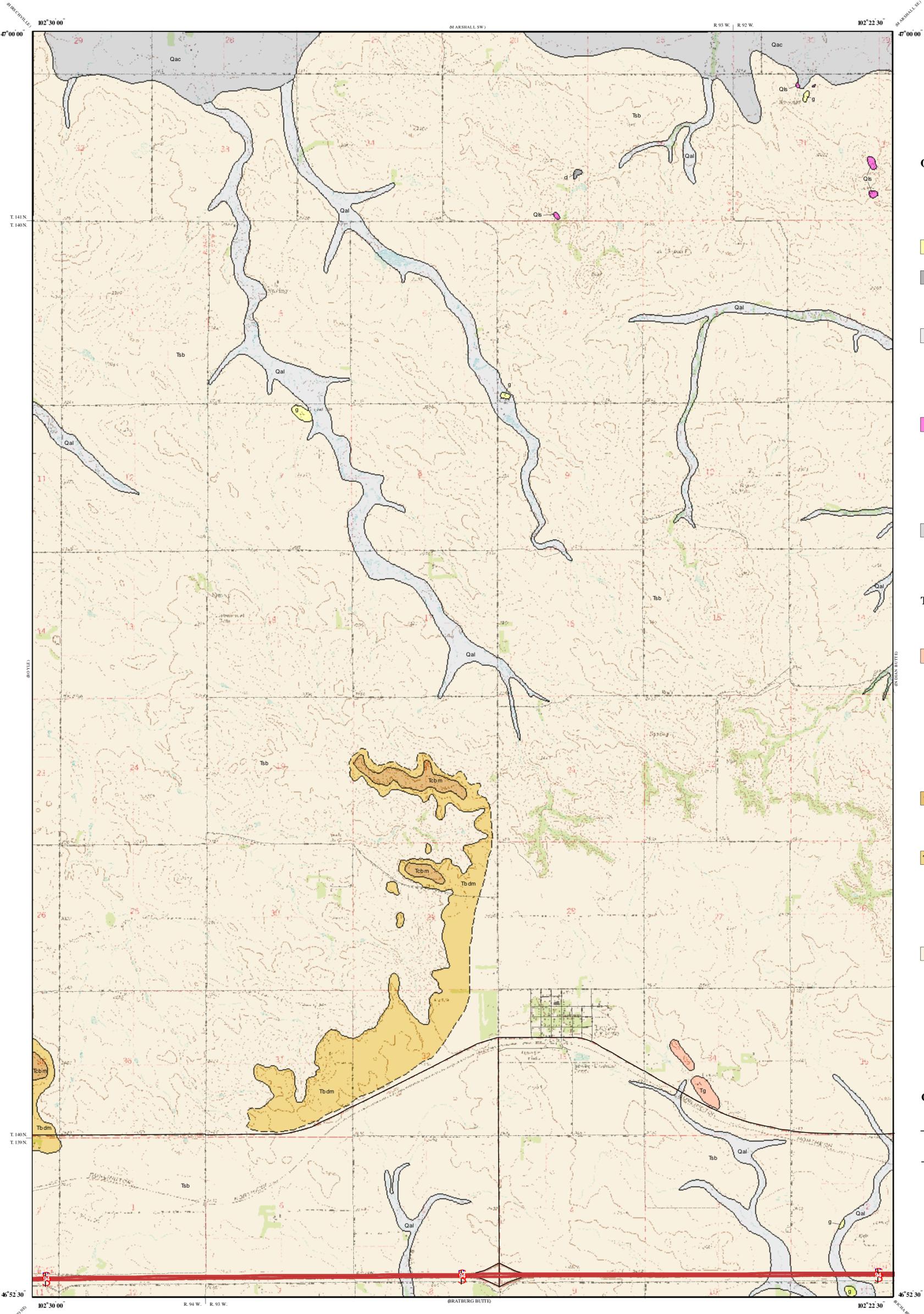
#### Other Features

- Interstate Highway
- Paved Road
- Unpaved Road

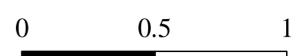
#### Correlation of Map Units

Quaternary	Recent	Qal	Qls	cl	g
	Pleistocene	Qac			
	Pliocene (?)	Tg			
	Eocene	Tgv	Tcbm		
			Tb dm		
Tertiary	Paleocene	Tsb			

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program.



Scale 1:24,000



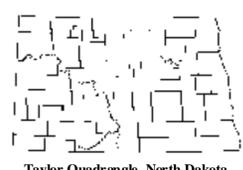
Miles

Lambert Conformal Conic Projection 1927 North American Datum  
Standard Parallels 46°52'30" and 47°00'00" NGVD 1929  
Contour Interval 20 Feet

12° 30'



1973 Magnetic North  
Declination at Center of Sheet



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