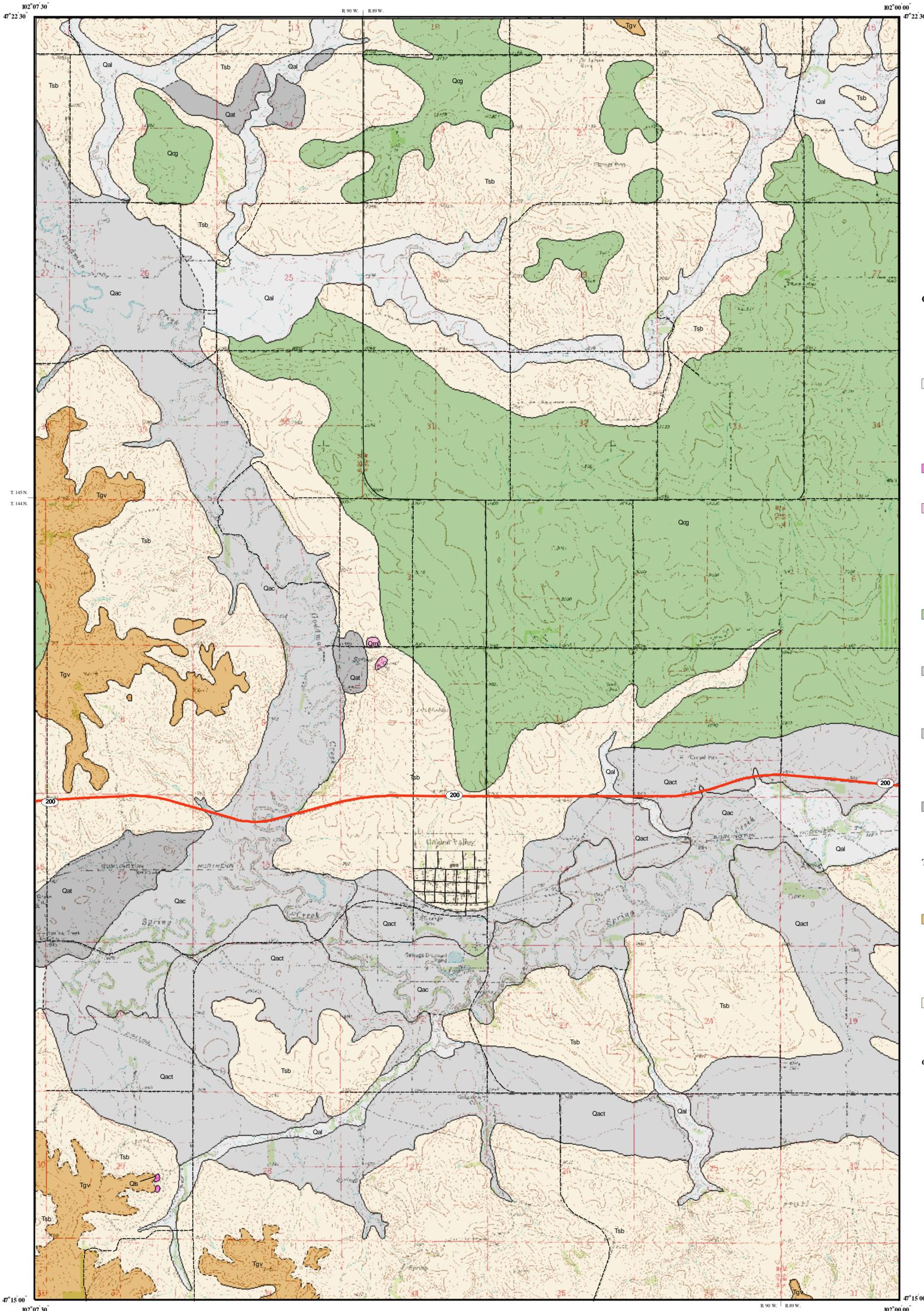


Surface Geology

Golden Valley Quadrangle, North Dakota

Edward C. Murphy

2004



UNIT DESCRIPTIONS

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qal Alluvium

Brownish gray to black sand, silt, clay, and lenses of gravel; floodplain deposits (typically less than 30 feet thick) along recent drainages. Not differentiated where it overlies Qac.

RECENT/PLEISTOCENE

Qs Landslide Deposits

Variable mixture of strata and deposits that have slid to the base of steep slopes.

Qml Abandoned Mine Lands

Surface underlain by voids created by the underground mining of lignite. Collapse of the mine voids often creates sinkholes or depressions at the surface.

PLEISTOCENE

COLEHARBOR GROUP

Qcg Glacial Deposits

Grayish brown, sandy, silty, bouldery clay with lenses of sand and gravel (glacial till). May occasionally include thick deposits of glacial outwash. Generally preserved as a veneer in the uplands.

Qac Proglacial Channels

Generally 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 unit was created to distinguish between these very thick channel deposits and the moderate to thin deposits mapped as Qal.

Qact Proglacial Terrace Deposits

An isolated proglacial channel where the upper surface has remained relatively intact because modern streams cut across it but do not flow lengthwise through the old channel. As a result, the top of these deposits lies 20 to 30 feet above the surrounding Qac deposits. In most of the proglacial channels in the area, the original upper surface is preserved only in isolated terrace deposits (Qact).

Qat Terrace Deposits

Five- to 20-foot-thick layers of sand and gravel (consisting primarily of silcrete, chert, flint, agate, petrified wood, siltstone) found beneath flat to gently undulating slopes adjacent to many of the major creeks and rivers.

TERTIARY SYSTEM

EOCENE-PALEOCENE

Tgv GOLDEN VALLEY FORMATION

Camels Butte Member:
Alternating beds of yellowish brown to brown, micaceous sandstone, siltstone, mudstone, claystone, and lignite.

Bear Den Member:
Brightly colored, kaolinitic claystone, mudstone, and sandstone typically overlain by a thin siliceous bed (silcrete) or lignite.

Tsb SENTINEL BUTTE FORMATION

Alternating beds of grayish brown to gray sandstone, siltstone, mudstone, claystone, and lignite.

Other Features

State Highway

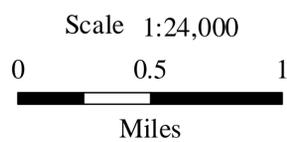
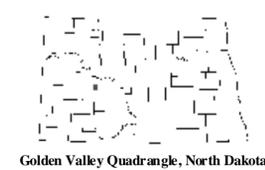
Paved Road

Unpaved Road

Geologic Symbols

Known contact between two geologic units

Approximate contact between two geologic units



Lambert Conformal Conic Projection
Standard Parallels 47°15'00" and 47°22'30"



The North Dakota Geological Survey compiled this map according to conventional cartographic standards, using what is thought to be the most reliable information available. The North Dakota Geological Survey does not guarantee freedom from errors or inaccuracies and disclaims any legal responsibility or liability for interpretations made from the map, or decisions based thereon. This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program.

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