North Dakota Geological Survey
24K: Brnt - sg

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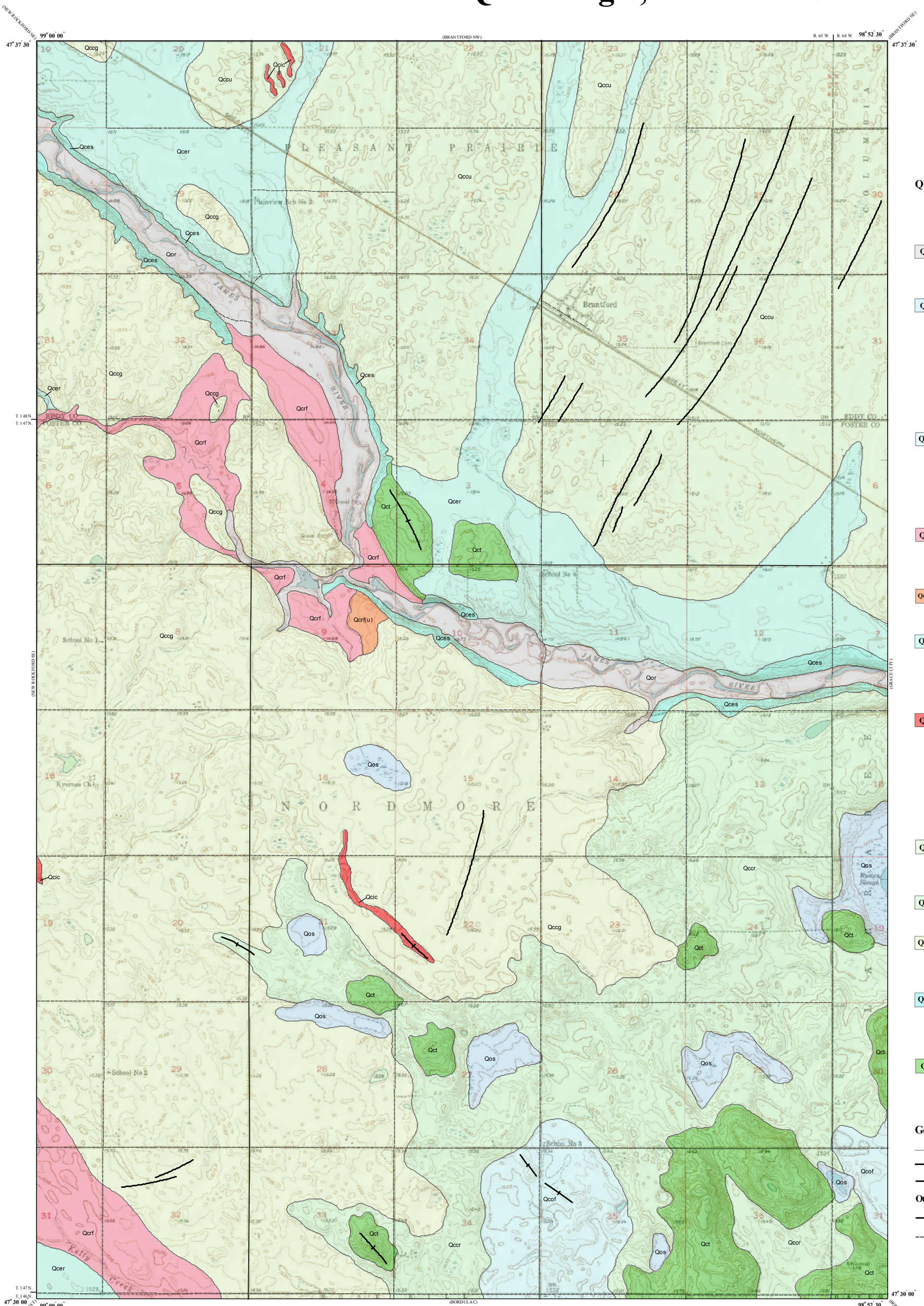
Surface Geology

Brantford Quadrangle, North Dakota



John P. Bluemle
2008

EXPLANATION

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qor **Alluvium**

River and stream sediment. Dark obscurely bedded clay and silt (mainly overbank sediment); on plains of modern streams.

Qos **Pond and Slough Sediment**

Dark, obscurely bedded clay and silt; in modern ephemeral ponds.

PLEISTOCENE

COLEHARBOR GROUP

Silt Facies

Offshore lake sediment consisting of laminated silt and clay of glacier-dammed lakes.

Qcof **Proglacial Lake Sediment**

Flat bedded sediment of low-lying plains.

Sand and Gravel Facies

River sediment. Moderately well-sorted, cross bedded sand and plane-bedded gravel, including sediment of meltwater rivers.

Qcrf **Flat Fluvial Plains**

Flat-bedded sediment of nearly level plains and river terraces, commonly with braided channel scars, oxbows, and other relict markings; relief of 1 to 10 feet.

Qcrf(u) **Flat Fluvial Plains - Upper**

Slightly higher level, presumably older fluvial surface.

Qcer **River-Eroded Glacial Sediment**

Glacial sediment with flat to undulating topography resulting from stream erosion in the bottom of large meltwater trenches or over broad areas of till that have been washed by running water; overlain by a thin layer of fluvial sediment of the Coleharbor Group or Oahe Formation in places.

Qcic **Ice-contact deposits**

Mainly gravel and sand with cobbles and boulders common; inclusions of glacial sediment common; local relief up to 50 feet; eskers and kames.

Till Facies

Glacial sediment. Unsorted, unbedded mixture of angular, subangular, and rounded blocks of rock, gravel, and sand, generally in a stiff matrix of silt and clay; yellowish-brown to olive-gray in exposures depending on weathering intensity; contains discontinuous lenses of gravel and sand.

Qccu **Undulating Surface With Numerous Kettles**

Nonintegrated drainage, and abundant ice-disintegration features; well-developed washboard ridges. Local relief commonly less than 50 feet.

Qccr **Undulating to Rolling Surface**

Fair to integrated drainage; relief commonly less than 30 feet.

Qccg **Flat to Gently Undulating Surface**

Poorly integrated drainage; relief generally less than 15 feet; ice disintegration features in places; washboard ridges in places; longitudinal, drumlin-like ridges in places.

Qces **Slopewash**

Eroded glacial sediment on sloping areas along the James River; glacial sediment surface with low local relief; similar to Qcer, but having broader extent and not confined by valley walls; analogous to a pediment surface.

Qct **Ice-Thrust Masses**

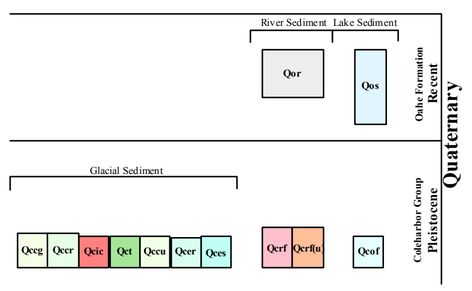
Glacial sediment draped over glacial or preglacial sediment or rock that has been sheared up into thrust slabs or folds near the ice margin; hilly areas with intense internal linearity; local concentrations of gravel and boulders; local relief may exceed 200 feet.

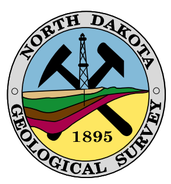
Geologic Symbols

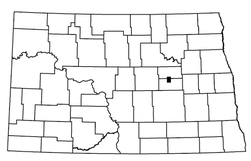
- Known contact between two geologic units
- Ridge-Transverse
- Ridge-Longitudinal

Other Features

- Paved Road
- Unpaved Road







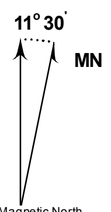
Brantford Quadrangle, North Dakota

Scale 1:24,000

0 0.5 1

Miles

Lambert Conformal Conic Projection Standard Parallels 47° 30' 00" and 47° 37' 30"
1927 North American Datum NGVD 1929
USGS 7.5 Minute Topographic Map Contour Interval 5 Feet
Road Layer Rectified to 2003 NAIP Digital Orthophoto



1949 Magnetic North
Declination at Center of Sheet

Cartographic Compilation: E.L.Kadrmas & S.S.Kranich

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