

Surface Geology

Bordulac NE Quadrangle, North Dakota

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EXPLANATION

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qor Alluvium

River and stream sediment. Dark obscurely bedded clay and silt (mainly overbank sediment); generally overlying cross-bedded sand (channel 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

Lake sediment. Laminated silty clay, clayey silt, and fine sand of glacier-dammed lakes; yellowish-brown to dark gray in exposures depending on weathering intensity.

Qcof Proglacial Lake Sediment

Mainly sandy silt underlying a flat plain. Interpreted as a lake plain.

Sand and Gravel Facies

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

Qcrf Uncollapsed 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. Mainly on the extensive outwash plain in the northern part of the quadrangle.

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.

Qccr Collapsed Glacial Sediment-Rolling

Rolling surface with kettles, partially to nonintegrated drainage, and numerous, low-relief ice-disintegration features. Associated areas of ice-thrust topography.

Qccr River-Eroded Glacial Sediment

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

Qccu Collapsed Glacial Sediment-Undulating

Undulating surface with numerous kettles, nonintegrated drainage, and abundant ice-disintegration features; well-developed washboard ridges in the northwest. Local relief commonly more than 50 feet.

Qct Ice-Thrust Masses

Glacial sediment that has been 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 150 feet.

CRETACEOUS

Kp PIERRE FORMATION

Dark gray shale; marine offshore sediment; maximum outcrop thickness is a few hundred feet.

Geologic Symbols

— Known contact between two geologic units

— Transverse Ridge

Other Features

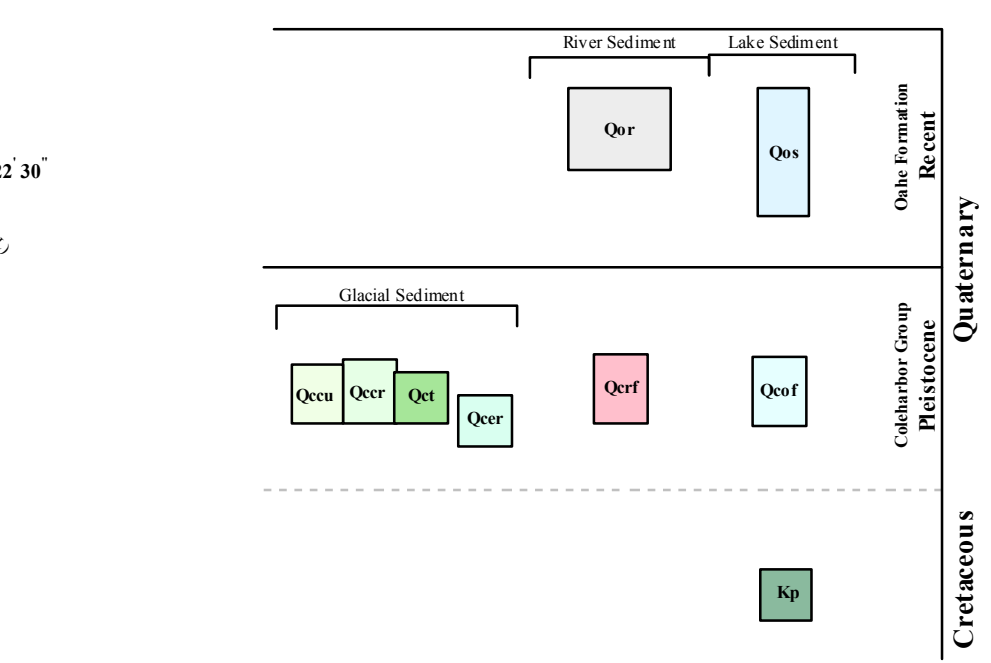
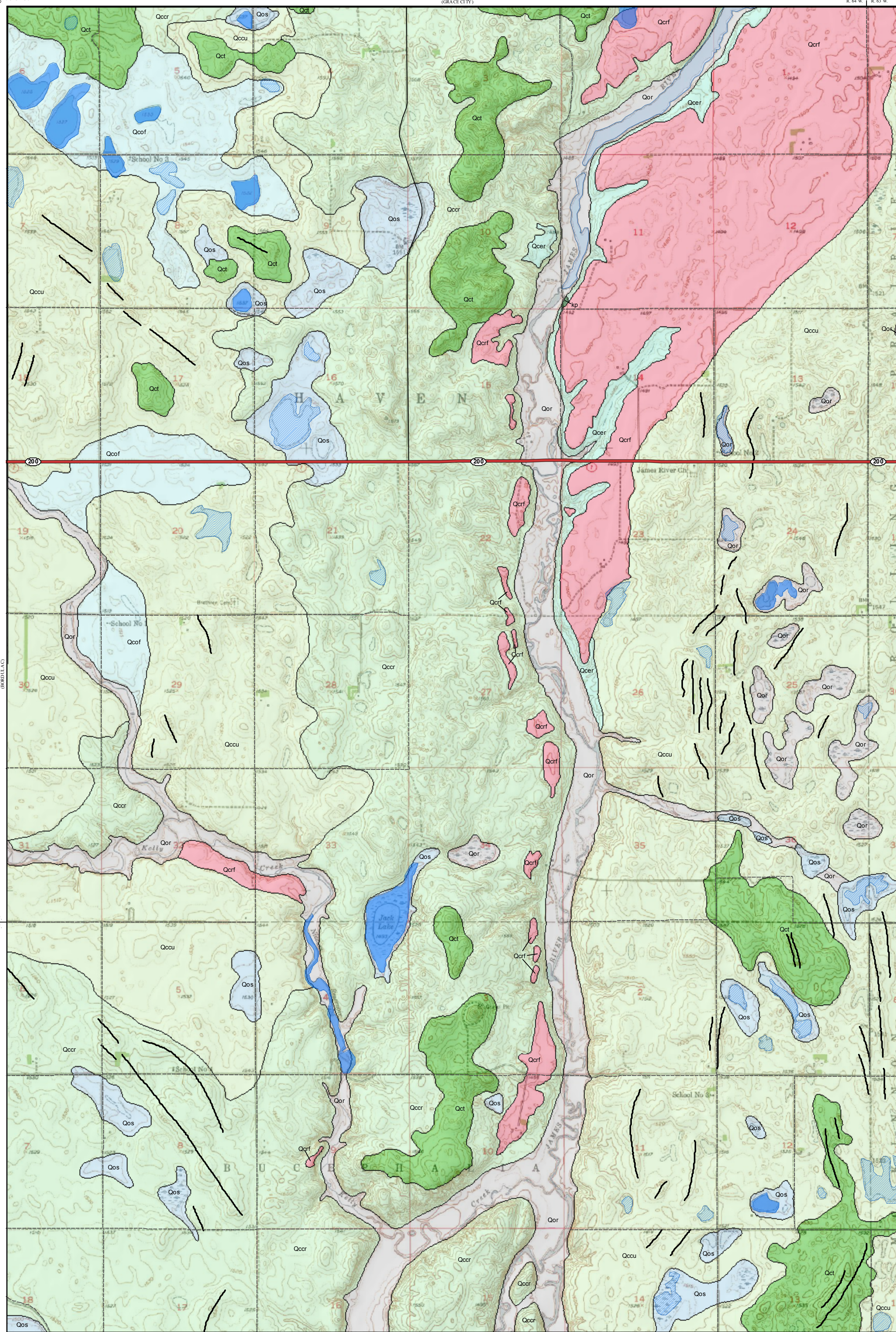
Water

Water - Intermittent

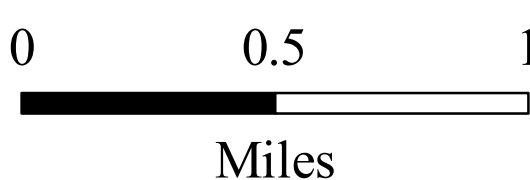
State Highway

Paved Road

Unpaved Road



Scale 1:24,000



Miles

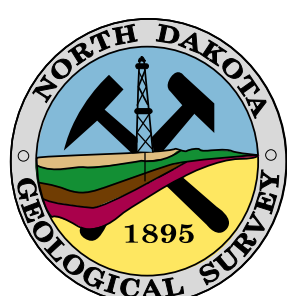
Lambert Conformal Conic Projection Standard Parallels 47° 22' 30" and 47° 30' 00"
1927 North American Datum NGVD 1929

USGS 7.5 Minute Topographic Map Contour Interval 10 Feet
Roads and Hydrologic Layers Rectified to 2003 NAIP Digital Orthophoto

10° 30'

MN

1950 Magnetic North
Declination at Center of Sheet



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