

# Surface Geology

## Bergen 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.

**Qcsl** Nearshore Sediment

Sand and fine gravel deposited by streams near the lake shore.

**Qcrh** Collapsed Fluvial Plains

Faulted and contorted gravel and sand; hilly topography; relief up to 50 feet.

##### 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.

**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 150 feet.

**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.

**Qcdg** Thin Layer of Till

Venier of till draped over and only slightly modifying the pre-existing topography (pre-glacial bedrock, older till, or gravel surface); relief up to 75 feet locally; some ice-thrust hills (Qct) that have been subsequently overridden by ice have a thin layer of till on top and are identified as Qcdg (hard to distinguish from Qct).

**Qclr** Longitudinal Ridges

Drumlins - some of the narrower of these are shown by lines; trend is from NW to SE. Hogback Ridge is the largest and most prominent longitudinal ridge in North Dakota. Local relief is up to 20 feet.

#### Geologic Symbols

— Known contact between two geologic units

— Ridge-Transverse

#### Other Features

Water

Water - Intermittent

Marsh or Wetland-Intermittent

U S Highway

Paved Road

Unpaved Road

