North Dakota Geological Survey
24K: Lnwd - sg

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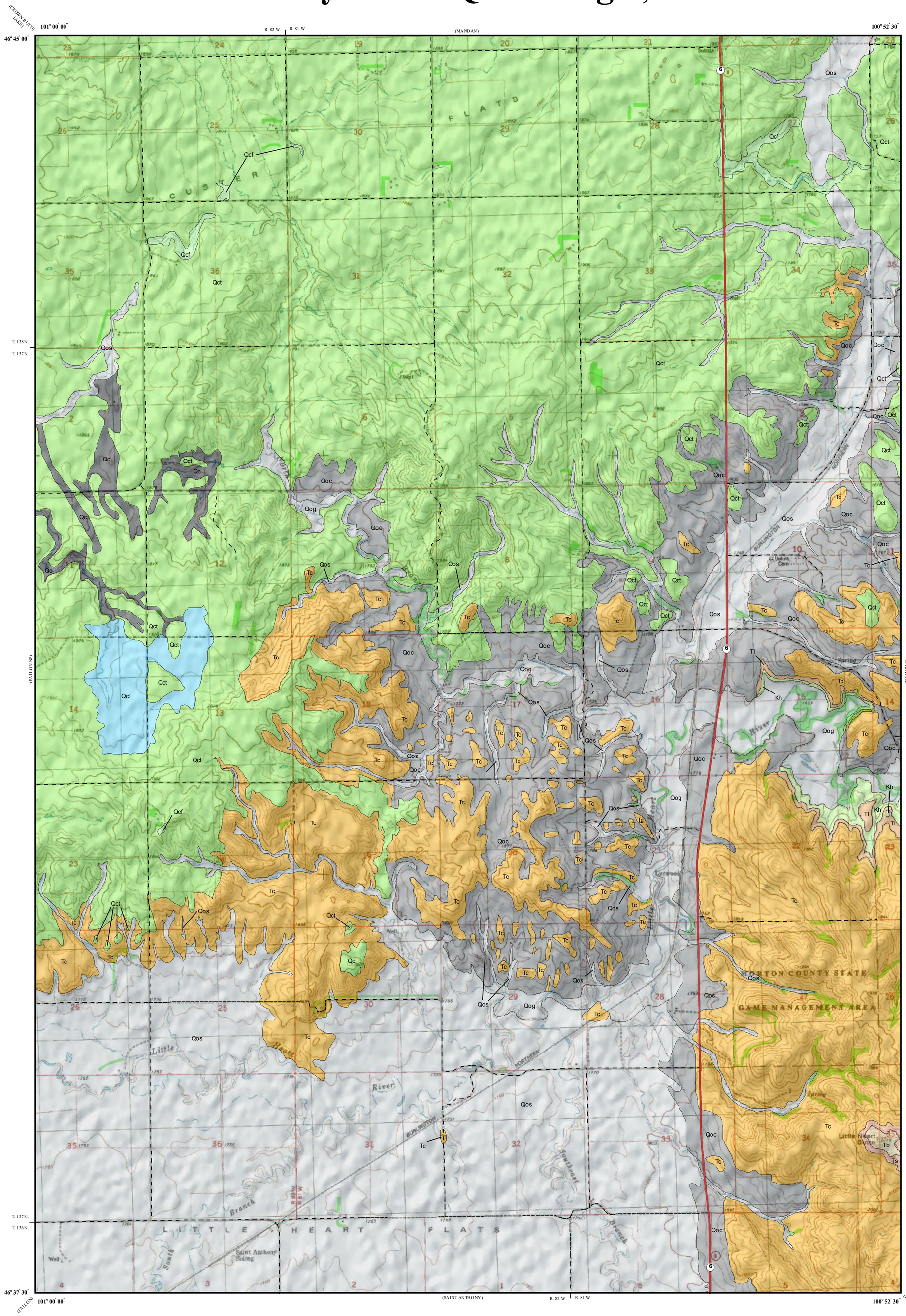
Surface Geology
Lynwood Quadrangle, North Dakota



Jonathan B. Ellingson
2014

UNIT DESCRIPTION

QUATERNARY SYSTEM

HOLOCENE

OAHE FORMATION
The Oahe Formation consists of colluvium, alluvial silt and clay, and gravel; it was deposited during the Pleistocene and Holocene Epoch. All post-glacial deposits are considered part of the Oahe Formation.

Qos **Silt and Clay**

Interbedded light gray, dark gray, light brown, dark brown, and black silt and clay with minor amounts of sand and gravel; as thick as 20 feet (6 meters); recent alluvial sediment.

Qog **Sand and Gravel of Holocene Age**

Interbedded fine, medium, and coarse grained sands, with gravel layers; gravel consisting of limestone, dolostone, sandstone, granite, gneiss, basalt, and other miscellaneous rock types; occasional organic material (shells, wood debris, and organic rich clays; as thick as 3 feet (1 meter); recent alluvial sediment.

HOLOCENE/PLEISTOCENE

Qoc **Colluvium**

Loose, incoherent sediment which forms on slopes to form aprons around buttes and large hills; as thick as 15 feet (5 meters); formed by creep, flow, and slumping.

PLEISTOCENE

COLEHARBOR GROUP

The Coleharbor Group includes all glacial sediments deposited in North Dakota during the Pleistocene Epoch. This group consists of three units within the Lynwood Quadrangle; glaciolacustrine, glaciofluvial, and till.

Qcl **Glaciolacustrine**

Alternating dark and light brown layers of flat-lying, continuous, interbedded silts and clays; deposited in a lake that formed as advancing ice blocked stream channels; as thick as 6 feet (2 meters).

Qcf **Glaciofluvial**

Glaciofluvial sediments exist in eskers and stream channels. Eskers consist of well stratified sands and gravels; they range from 500 feet (160 meters) to 1.5 miles (2.4 km) in length and 10 to 30 feet (3 to 9 meters) in height. Meltwater stream deposits consist of stratified sand and gravel; as thick as 30 feet (9 meters).

Qct **Till**

Light gray, light tan, and light brown unsorted bouldery, cobbly, pebbly, sand, silt, and clay. The boulders, cobbles, and pebbles are limestone, dolostone, granite, gneiss, and basalt; as thick as 30 feet (9 meters).

PRE-GLACIAL DEPOSITS

The Pre-glacial deposits consist of only one unit, the Custer Flats sand, silt, and clay. This unit was deposited after the bedrock formations but before the Coleharbor Group. The Custer Flats is interpreted to have been deposited in the Early Pleistocene Epoch.

Qc **Custer Flats Sand, Silt, and Clay**

Light brown, dark brown, and light gray sand, silt, and clay; stream sediment; as thick as 15 feet (5 meters).

BEDROCK FORMATIONS

The bedrock formations exposed at the surface of the study area include the Hell Creek Formation of the Late Cretaceous, and the Ludlow, Cannonball, Slope, and Bullion Creek Formations of the Tertiary.

TERTIARY SYSTEM

Tb **BULLION CREEK FORMATION**

Yellow to yellowish-brown silt, sand, clay, carbonaceous shale, sandstone, and lignite; non-marine stream, swamp, floodplain, and lacustrine sediment; as thick as 120 feet (37 meters).

Ts **SLOPE FORMATION**

Grayish-brown to yellowish-brown sand, silt, clay, sandstone, and lignite; non-marine river, lake, and swamp sediments; as thick as 40 feet (12 meters).

Tc **CANNONBALL FORMATION**

Interbedded gray, brownish gray, and olive brown claystone, sand, and sandstone; marine shoreline and offshore marine sediments; as thick as 400 feet (122 meters).

All map areas not labeled are (Tc) Cannonball Formation.

Tl **LUDLOW FORMATION**

Yellow, gray, and brown silt, sand, clay, sandstone, and lignite; nonmarine, river, lake, delta, and swamp sediments; as thick as 30 feet (9 meters).

CRETACEOUS SYSTEM

Kh **HELL CREEK FORMATION**

Somber hues of brown, light gray, and brownish gray sand, silt, clay, carbonaceous clay, lignite, and poorly consolidated sandstones, siltstones, mudstones, and shales: nonmarine swamp and floodplain sediment as thick as 250 feet (76 meters).

Geologic Symbols

Known contact between two geologic units

Other Features

State Highway
Paved Road
Unpaved Road

Note: Lynwood 24k quadrangle was not edgematched to adjacent mapped 24k quadrangles: Mandan and Schmidt.

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

Cartographic Compilation: Elroy L. Kadrmas

NORTH DAKOTA GEOLOGICAL SURVEY 1895

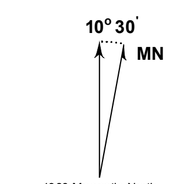
Lynwood Quadrangle, North Dakota

Scale 1:24,000

0 0.5 1

Miles

Lambert Conformal Conic Projection Standard Parallels 46° 37' 30" and 46° 45' 00"
1927 North American Datum NGVD 1929
USGS 7.5 Minute Topographic Map Contour Interval 20 Feet
Road Layer Rectified to 2003 NAIP Digital Orthophoto



1980 Magnetic North
Declination at Center of Sheet