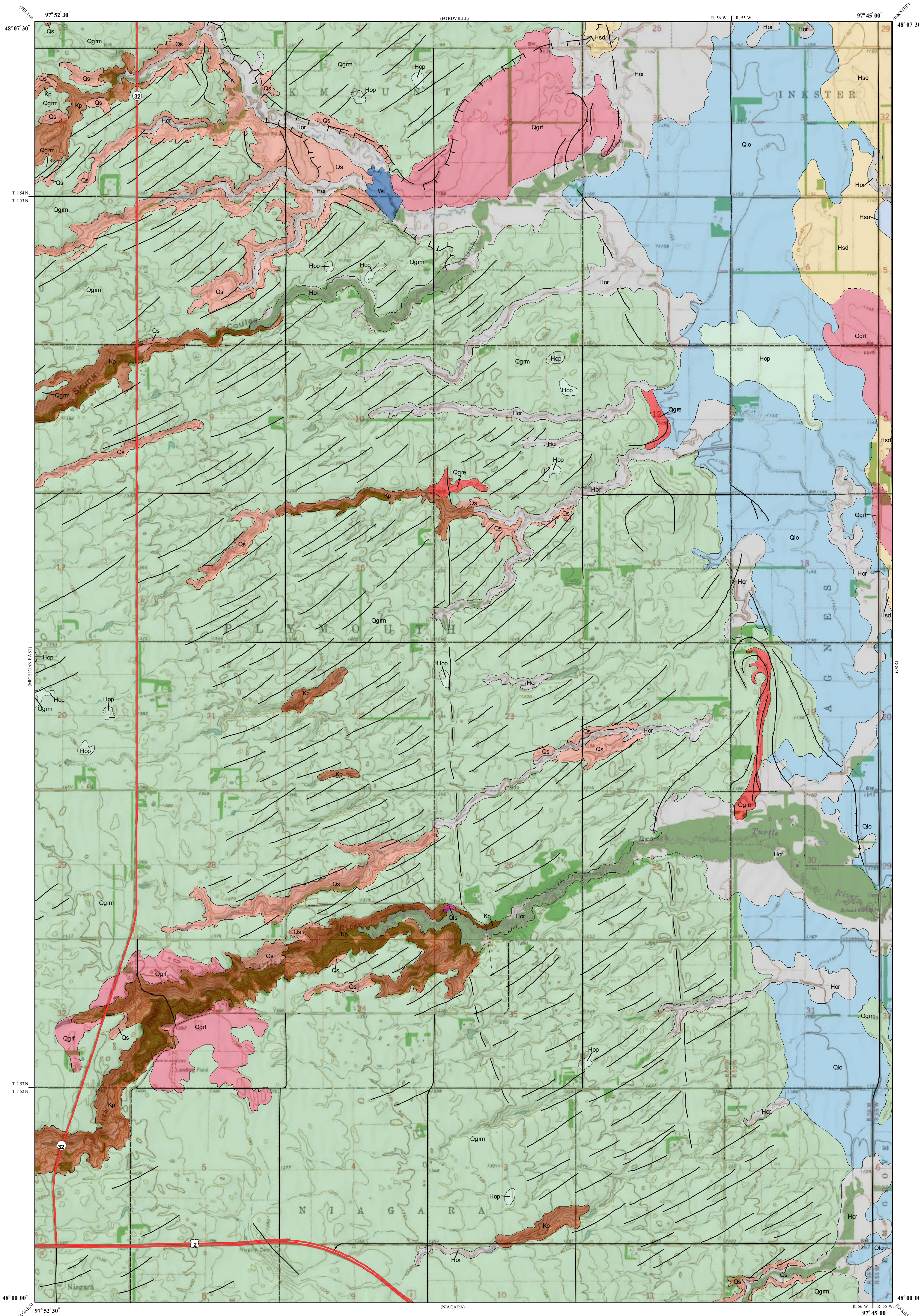


Surface Geology

Fordville SE Quadrangle, North Dakota

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EXPLANATION



- W** Water
- QUATERNARY SYSTEM**
- HOLOCENE**
- Qls** **Landslide Deposits**
Variable mixture of strata and deposits that have slid to the base of steep slopes.
- Qahe** **Oahe Formation**
Sand, silt, clay, gravel, and organic debris; all postglacial sediment deposited on the landscape; includes river sediment, windblown sediment, lake sediment, and slope wash.
- Hor** **Alluvium And Overbank Sediment**
Sand, silt, clay and disseminated organic debris; obscurely bedded; dark colored; in many places associated with sand and gravel of older river-channel sediment; commonly more than three feet (1 meter) thick.
- Hop** **Pond and slough sediment**
Organic debris, clay, and silt; obscurely bedded; dark colored; generally more than three feet (1 meter) thick; deposited in poorly drained depressions in the landscape.
- Sherack** **Sherack Formation**
Clay, silty clay, silt, and sand; thinly laminated; clayey in the central part of the lake plain and silty toward the margins; light gray where unoxidized and yellowish gray to olive-brown where oxidized; wood fragments common at the base, offshore, nearshore, shoreline and deltaic sediment deposited south of ice that occupied the Red River lowland during the Emerson Phase of Glacial Lake Agassiz.
- Hso** **Offshore Lake Sediment**
Laminated clay, clayey silt, silty clay, silt, and sand; clayey in the central part of the Red River Valley and siltier towards the margins; laminations are generally only a few millimeters thick but some of the silty beds are locally several centimeters thick; bedding deformed in places into folds a few feet high and several feet across; light gray when unoxidized and yellowish gray to olive brown when oxidized; wood fragments common in the lower few feet of the formation, as much as 100 feet (33 meters) thick.
- Hsd** **Deltaic sediment - sand and gravel**
Moderately well-sorted; low-angle flat-bedded to high-angle cross-bedded grayish brown and yellowish red silt, sand, and gravel deposited in fluvial channels by meltwater streams flowing onto the Elk Valley delta; flat to gently undulating surface commonly with braided channel scars, oxbows, and other relict markings; up to 70 feet (21 meters) thick.
- HOLOCENE AND OLDER**
- Qs** **Sediment eroded by slope processes**
Sand, silt and clay; unsorted; unbedded; often pebbly; steeply sloping and eroded by mass movement and slope wash; lithology reflects the upslope material; colluvium commonly present at the base of steep slopes.
- PLEISTOCENE**
- COLEHARBOR GROUP**
The Coleharbor Group includes all sediments in North Dakota associated with deposition by Pleistocene glaciers.
- GOOSE RIVER FORMATION (UNDIFFERENTIATED)**
Sediment deposited by a glacier as a result of a readvance from the northwest (Rising Mountain provenance) of the generally retreating Late Wisconsin ice sheet into the Red River lowland.
- Qgrm** **Clay-Loam, pebbly**
Unsorted; unbedded; contains cobbles and boulders; shale pebbles abundant; as much as 80 feet (24 meters) thick; deposited by glacial ice on an ice-cored glaciated landscape; collapsed glacial sediment with less than 30 feet (10 meters) of relief.
- Ogre** **Sand and gravel**
Moderately well-sorted sand and gravel; crossbedded to flatbedded faults and soft-sediment deformation structures common; contains inclusions of well sorted silt; cobbles, boulders, and inclusions of till common; level to undulating ridges (eskers) and mounds (kames) with local relief up to 80 feet (24 meters); channel sediment deposited by streams flowing on, in, or under glacial ice.
- Ogrf** **Sand and gravel, shaly**
Moderately well-sorted, light to dark grayish brown, low-angle flat-bedded to high-angle cross-bedded silt, sand, and gravel deposited as outwash by the ancestral Park River and other meltwater streams flowing off the Pembina Escarpment onto the Elk Valley delta; flat to gently undulating surface commonly with braided channel scars, oxbows, and other relict markings; up to 70 feet (21 meters) thick.
- OLDER LAKE SEDIMENT**
Lake sediment deposited in the glacial Lake Agassiz basin south of glacial ice that occupied the Red River lowland during a pre-Emerson Phase high-water event.
- Qlo** **Offshore lake sediment**
Clay; obscurely laminated to unbedded; dark gray to black.
- CRETACEOUS SYSTEM**
- Kp** **Pierre and Niobrara Formation, undifferentiated (Upper Cretaceous)**
Shale; commonly obscured by a thin veneer of till; offshore marine deposits.
- Geologic Symbols**
- Known contact between two geologic units
- - - Approximate contact between two geologic units
- Other lineations**
- Established from aerial photographs; line marks the dimension of the feature; located in glacial sediment and thinly veneered glacial sediment; interpreted as disintegration trenches, streambed bedforms associated with the movement of glacial ice, or lineations of unknown origin; generally difficult to discern on topographic maps and on the ground.
- Beach ridges, spits and offshore bars
- Established from aerial photographs; line indicates the crest of the ridge; interpreted as beach ridges or offshore bars deposited along the margin of Lake Agassiz; discernible on topographic maps and on the ground.
- Sharp scarp
- Established from aerial photographs and LIDAR; line indicates the crest of the scarp and the hachures point downslope; easily discernible on topographic maps and on the ground.
- Other Features**
- 21 US Highway
- 32 State Highway
- Paved Road
- - - Unpaved Road

