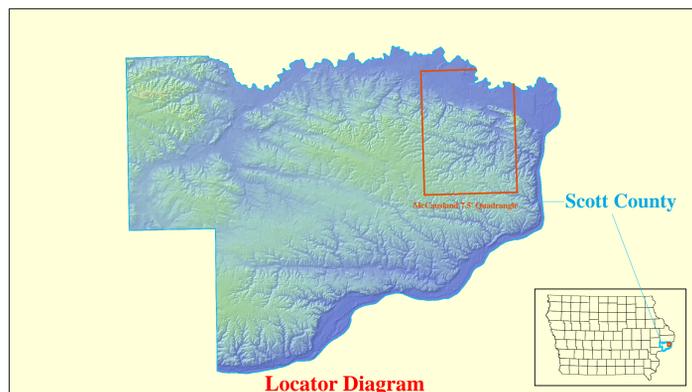
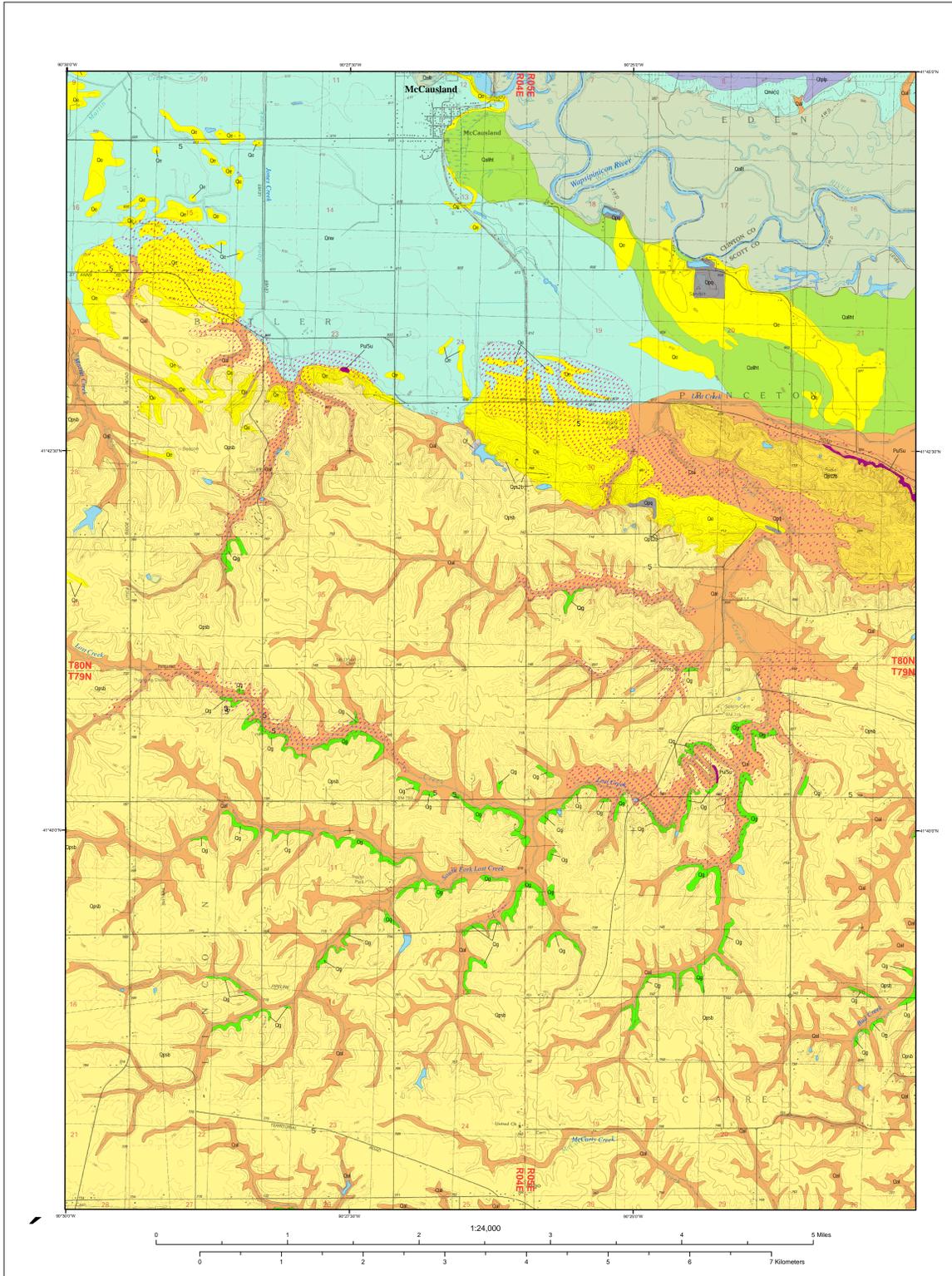


Surficial Geologic Materials of the McCausland 7.5' Quadrangle Scott County, Iowa



SURFICIAL GEOLOGIC MATERIALS OF THE MCCAUSLAND 7.5' QUADRANGLE, SCOTT COUNTY, IOWA

Iowa Geological Survey Open File Map 04-04, September 2004

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LEGEND

Description of Map Units

HUDSON EPISODE

Qal - Alluvium (DeForest Formation-Undifferentiated) Variable thickness (<1 to 5 meters) of very dark gray to brown, noncalcareous to calcareous, stratified silt clay loam, clay loam, loam to sandy loam alluvium and colluvium in stream valleys, on hill slopes and in closed depressions. May overlie Glasford Formation glacial till or Noah Creek Formation. Associated with low-relief modern floodplain, closed depressions, modern drainageways or topsoil positions on the landscape. Seasonal high water table and potential for frequent flooding.

Qal1 - Wapispinicon River Valley - Low Terrace (DeForest Formation-Camp Creek Mbr. and Roberts Creek Mbr.). Variable thickness of less than 1 to 5 meters of very dark gray to brown, noncalcareous, stratified silt clay loam, loam, or clay loam, associated with the modern channel belt of the Wapispinicon River valley. Overlies Noah Creek Formation. Occupies lowest position on the floodplain i.e. modern channel belts. Seasonal high water table and frequent flooding potential.

Qal1t - Wapispinicon River Valley - Intermediate-High Terrace (DeForest Formation-Gunder Mbr.). Variable thickness of less than 1 to 5 meters of very dark gray to brown, noncalcareous, silt clay loam to loam alluvium or colluvium that overlies Noah Creek Formation. Occupies terrace and valley margin position 1 to 2 meters above the modern floodplain. Seasonal high water table and low to moderate flooding potential.

WISCONSIN EPISODE

Qe - Sand Dunes and Sand Sheets (Peoria Formation-sand facies) Generally less than 3 meters of yellowish brown, massive, calcareous loamy sand to fine sand. It may overlie yellowish-brown coarse-grained sand and gravel (Noah Creek Fm.), or it may overlie Silurian-age carbonate bedrock. Usually restricted to a narrow belt along major river valley bottoms.

Qw - Sand and Gravel (Noah Creek Formation) More than three meters of yellowish brown to gray, poorly to well sorted, massive to well stratified, coarse to fine feldspathic quartz sand, pebbly sand and gravel. In places mantled with one to three meters of fine to medium, well sand derived from wind reworking of the alluvium. This unit encompasses deposits that accumulated in stream valleys during the Wisconsin Episode.

Qw(s) - Slackwater deposits overlying sand and gravel (Noah Creek Formation-silt facies) Generally less than 2 meters of dark grayish brown to yellowish brown, massive to laminated, calcareous silt loam. Unit overlies ~ 5 meters of dark gray, dark grayish brown, dark brown to dark yellowish brown medium to coarse sand, gravelly sand to pebbly gravel. Low-relief landforms expressed as broad terraces; long, narrow longitudinal terraces or cusped-shaped point terraces. Unit is bench on a gray, calcareous, massive, dense clay loam diamictic Glasford Formation. No flooding potential.

Qplp - Late Phase High Terrace (LPHT) (Peoria Formation-silt and/or sand facies) Two to seven meters of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and intercalated fine to medium, well sorted, sand. Grades downward to poorly to moderately well sorted, moderately to well stratified, coarse to fine feldspathic quartz sand, loam, or silt loam alluvium.

Qpsh - Thick Loess (Peoria Formation-silt facies) Generally 10 to 15 meters of yellowish to grayish brown, massive, jointed calcareous or noncalcareous silt loam to silty clay loam. Overlies massive, fractured, clay loam glacial till of the Glasford formation with or without intervening clayey Farndale Geosol, or fractured Silurian-age carbonate rock. This mapping unit encompasses upland divides, ridgetops and convex sideslopes. Well to somewhat poorly drained landscape.

Qpsh2 - Eolian Sand over Silt (Peoria Formation-sand/silt facies) Ten to twenty meters of yellowish brown to gray, moderately to well stratified noncalcareous or calcareous, fine to medium, well sorted, eolian sand. May contain interbeds of yellowish brown to gray, massive, silt loam loess. Overlies Peoria Formation silt facies which in turn may be underlain by Glasford Formation glacial till or Silurian-age carbonate bedrock. The mapping unit encompasses upland ridgetops directly south of the Wapispinicon River valley. Well to somewhat poorly drained landscape.

ILLINOIS EPISODE

Qg - Till (Glasford Formation) Generally 5 to 15 meters of very dense, massive, fractured, loamy glacial till of the Glasford Formation with or without a thin loess mantle (Peoria Formation-less than 2 meters). This mapping unit encompasses low side valley slopes, primarily on the south side of drainages. Drainage is variable from well drained to poorly drained.

PALEOZOIC

Pu/Su - Pennsylvanian Bedrock (Cherokee Group) and Silurian Bedrock (Gower Formation) Silurian Gower Formation dolomite exposures are shown as solid pattern. The hatched pattern indicates Pennsylvanian dark shale occurs within 8 meters (25 feet) of the land surface in the western reaches of Lost Creek and Silurian Gower Formation dolomites within 8 meters (25 feet) in other areas of the map. The Gower Formation is dominated by vuggy to fossiliferous dolomites. Exposures and shallow rock areas are relatively common along the southern edge of the Wapispinicon River valley, Lost Creek and several smaller drainages.

QF - Fill Areas of major land filling. Fill associated with railroad grades, highway grades and land leveling. Variable in texture ranging from loamy to sandy to concrete rubble. Extent mapped as shown in county soil surveys.

Qpq - Pits and Quarries Sand and gravel pits and rock quarries. Extent mapped as shown in county soil surveys.

Water Features

Drilling Sites

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