

Surficial Geologic Materials of the Ely and Swisher Quadrangles, Iowa

OVERVIEW OF THE SURFICIAL GEOLOGIC MAPS
OF DEVELOPING AREAS IN IOWA
Phase 1: Ely and Swisher 7.5' Quadrangles

Iowa Geological Survey
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Prepared by
Stephanie A. Tassier-Surine¹, Deborah J. Quade¹, E. Arthur Bettis III²,
and James D. Gigliano¹



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¹Iowa Department of Natural Resources, Iowa Geological Survey
109 Trowbridge Hall, Iowa City, IA 52242-1319

²Department of Geoscience, The University of Iowa, 121 Trowbridge Hall, Iowa City, IA 52242

LEGEND

Description of Map Units

- HUDSON EPISODE**
- Qd1 - Alluvium (De Forest Formation)** One to four meters of massive to weakly stratified, gray-brown to brown loam, silt loam, clay loam, silty loam, and overlying less than 7 meters of poorly to moderately well sorted, massive to moderately well stratified, coarse to fine feldspathic quartz sand, pebbly sand, and gravel and more than 2 meters of gravels and coarse to medium sand and gravel. Unit also includes colored deposits derived from glacial till in situ. Seasonally high water table occurs in this map unit.
 - Qd2 - Iowa 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, silt loam, and clay loam associated with the lower terrace level of the Iowa River valley. Overlies Noah Creek Formation. On these terraces and on the lower terrace are common features associated with this terrace level. Post-tectonic alluvium thickness varies from 5 meters higher across to 2 meters along the river course and lower along river. Seasonally high water table and frequent flooding potential.
 - Qd3 - Iowa River Valley-Intermediate Terrace (DeForest Formation-Camp Creek Mbr., Roberts Mbr. and Granger Mbr.)** Variable thickness of less than 1 to 5 meters of very dark gray to brown, noncalcareous, stratified silt clay loam to loam that overlies Noah Creek Formation. Occasional high water table and frequent flooding potential.
 - Qd4 - Iowa River Valley-High Terrace (DeForest Formation-Granger Mbr.)** Variable thickness of less than 1 to 7 meters of very dark gray to brown, noncalcareous, silty clay loam, loam silty loam or silt loam. Overlies Noah Creek Formation. Eolian dunes composed of Peoria Formation sand facies are common on the terrace surface. Occasional surface gravel up to 2 meters above the terrace floodplain. This unit may represent a complex of intermediate high terrace sediments. Seasonally high water table.
 - Qd5 - Alluvial fan (Cerritos Mbr.)** Variable thickness of 2 to 5 meters of dark brown to yellowish brown, noncalcareous, silt loam to loam with interbedded lenses of fine sand and silt. A pebbly lag is commonly found at or near the fan surface. Overlies a broad intermediate terrace. Steep-sloped fans at the base of low-order terraces and alluvial slopes along the northern margin of the Iowa River Valley.
- WISCONSIN EPISODE**
- Qw1 - 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 sorted, and derived from total weathering of the alluvium. This unit encompasses deposits that accumulated in stream valleys during the Wisconsin Episode.
 - Qw2 - Low Phase High Terrace (LPHH) (Peoria Formation-silt and sand facies)** Two to seven meters of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and stratified fine to medium, well sorted, sand. Gravel downward to poorly to moderately well sorted, medium to well stratified, coarse to fine feldspathic quartz sand, loam, or silt loam alluvium.
 - Qw3 - Early Phase High Terrace (EPHH) (Peoria Formation-silt and sand facies)** Two to seven meters of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and stratified fine to medium, well sorted, sand. The Peoria Formation surface of a fluvial channel developed in Wisconsin which has been modified with expressed hangover facies developed in poorly to moderately well sorted, moderately to well stratified, coarse to fine sand, loam, or silt loam alluvium.
 - Qw4 - Loam and Interstratified Sand (Peoria Formation-silt facies)** Three to six meters of yellowish brown to gray, massive, blocky, noncalcareous grading downward to calcareous silt loam and stratified fine to medium, well sorted, sand. Sand is most abundant in lower part of the outcrop package. Overlies massive, fractured, loamy glacial till of the Wolf Creek or Allamont Formations with a yellow interstratified clay. Some clay. Tappan Contact.
 - Qw5 - Kalia Sand and Interstratified Silt (Peoria Formation-silt facies)** Five to fifteen meters of yellowish brown to gray, moderate to well stratified noncalcareous or calcareous, fine to medium, well sorted, clayey sand. May contain interbeds of yellowish brown to gray, massive, silt loam facies. Overlies eroded, massive, fractured, loamy glacial till of the Wolf Creek or Allamont Formations or fractured till with some lignite carbonaceous horizons.
 - Qw6 - Loam Shallow to Sand and Gravel (Peoria Formation-silt facies)** One to two meters of yellowish brown, massive, noncalcareous silt loam. Overlies pebbly sand and gravel erosion surface alluvium that is one to three meters thick, which, in turn, overlies eroded massive, fractured, fine, loamy glacial till of the Wolf Creek or Allamont Formations. Seasonally high water table may occur in this map unit.
 - Qw7 - Sand and Gravel Shallow to Silt (Unsorted erosion surface alluvium)** One to three meters of yellowish brown to silt loam, massive to weakly stratified, noncalcareous, medium to coarse, poorly sorted pebbly to evenly sand with interbedded gravel and loam. Overlies massive, fractured, fine, loamy glacial till of the Wolf Creek or Allamont Formations. Deposits in this mapping unit are derived primarily from erosion of glacial till in the adjacent drainage basin. Seasonally high water table may occur in this map unit.
 - Qw8 - Loose and Sandy Solonchok Shallow to Glacial Till (Unsorted erosion surface alluvium)** One to three meters of yellowish brown to gray, massive to weakly stratified, well to poorly sorted heavy, sandy silt loam to silt loam with interbedded gravel and loam. May include some areas mantled with less than one meter of Peoria Silt (DeForest Formation, fractured, fine glacial till of the Wolf Creek and Allamont Formations). Seasonally high water table may occur in this map unit.
- PRE-ILLINOIS EPISODE**
- Qw9 - Glacial Till (Wolf Creek and Allamont Formations)** Less than 10 meters of yellowish brown to grayish brown, massive, often calcareous and fractured clay loam to loam facies, possibly with a thin mantle of loess. Overlies gray, calcareous, very dense clay loam to loam facies. Typically exposed on valley side slopes and narrowly dissected interfluvial.
- Paleozoic**
- D4 - Devonian Bedrock Exposures (Cedar Valley Group)** Fractured, interbedded limestone and dolostones.
 - Qp1 - Pits and Quarries** Sand and gravel pits and rock quarries. Extent mapped as shown in county soil surveys.
 - Qf - Fill** Areas of major land filling. Fill associated with railroad grades, highway grades and land leveling. Variable in texture ranging from loamy to concrete rubble. Extent mapped as shown in county soil surveys.
- Water Features**
- Water Features**
 - Reservoir Flood Plain**
 - Well Hole Locations**

