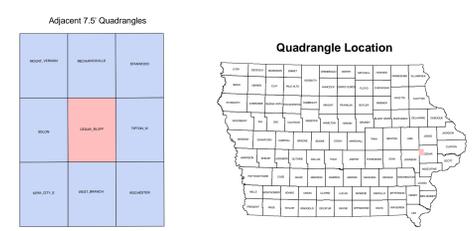


Surficial Geology of the Cedar Bluff (Iowa) 7.5' Quadrangle

LEGEND

Cenozoic Quaternary System HUDSON EPISODE

- Qal** - **Alluvium** (DeForest Formation-Undifferentiated) One to four meters (3 to 13 feet) of massive to weakly stratified, grayish brown to brown loam, silt loam, clay loam, or loamy sand overlying less than three 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 three meters of pre-Wisconsin or Wisconsin Noah Creek Formation sand and gravel. Unit also includes colluvial deposits derived from adjacent map units. Seasonally high water tables occur in this map unit.
 - Qallt** - **Cedar River Valley - Low Terrace/Modern Channel Belt** (DeForest Formation-Camp Creek Mbr. and Roberts Creek Mbr.) Variable thickness of less than one to 5 meters (3 to 16 feet) of very dark gray to brown, noncalcareous, stratified silty clay loam, loam, or clay loam, associated with the Holocene channel belt of the Cedar River valley. Overlies Noah Creek Formation sand and gravel. Ox-bow lakes and meander scars are common features associated with this terrace level. Post-settlement alluvium thickness varies from 1.5 feet in higher areas to 6 feet along the river course and in lower lying areas. Seasonally high water table and frequent flooding potential.
 - Qe** - **Sand Dunes and Sand Sheets** (Peoria Formation-sand facies) Generally less than six meters (20 feet) of yellowish brown, massive, calcareous loamy sand to fine sand. It may overlie yellowish-brown sand and gravel (Noah Creek Formation), or reworked unnamed loamy sediments associated with the Iowa Erosion Surface and/or it may overlie yellowish to grayish brown, often calcareous and fractured clay loam to loam diamicton (Wolf Creek and Alburt Formation)
 - Qnw** - **Sand and Gravel** (Noah Creek Formation) More than three meters (10 feet) 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 sand derived from wind reworking of the alluvium. This unit encompasses deposits that accumulated in stream valleys during the Wisconsin Episode.
 - Qptlp** - **Late Phase High Terrace (LPHT)** (Peoria Formation-silt and/or sand facies) Generally two to eight meters (6 to 26 feet) 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 well stratified, coarse to fine feldspathic quartz sand, loam, or silt loam alluvium.
 - Qptep** - **Early Phase High Terrace (EPHT)** (Peoria Formation-silt and/or sand facies) Generally two to twelve meters (6 to 39 feet) of yellowish brown to gray, massive, jointed, calcareous or noncalcareous, silt loam and intercalated fine to medium, well sorted, sand. The Peoria deposits overlie a Farmdale Gessol developed in Roxanna Silt which in turn overlies a well-exposed Sangamon Gessol developed in poorly to moderately well sorted, moderately well stratified, coarse to fine sand, loam, or silt loam alluvium.
 - Qps1b** - **Thick Loess and Intercalated Eolian Sand** (Peoria Formation-silt facies) Generally five to fifteen meters (16 to 49 feet) of yellowish brown to gray, massive, noncalcareous grading downward to calcareous silt loam and intercalated fine to medium, well sorted, sand. Minimum thickness of five meters on uplands. Maximum thickness of two to seven meters of loess occurs on adjacent slopes. Overlies massive, fractured, loamy glacial till of the Wolf Creek or Alburt Formations with or without intervening clayey Farmdale/Sangamon Gessol.
 - Qps2** - **Eolian Sand and Intercalated Silt** (Peoria Formation—sand facies) Generally five to fifteen meters (16 to 49 feet) of yellowish brown to gray, moderately 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 eroded, massive, fractured, loamy glacial till of the Wolf Creek or Alburt Formations or fractured Silurian-age carbonate bedrock.
 - Qwa2** - **Loamy and Sandy Sediment Shallow to Glacial Till** (Unnamed erosion surface sediment) Generally one to six meters (3 to 19 feet) of yellowish brown to gray, massive to weakly stratified, well to poorly sorted loamy, sandy and silty erosion surface sediment. Map unit includes some areas mantled with less than two meters of Peoria Silt (loess). Overlies massive, fractured, firm glacial till of the Wolf Creek and Alburt Formations. Seasonally high water table may occur in this map unit.
 - Qwa3** - **Till** (Wolf Creek or Alburt Formations) Generally three to fifty-five meters (10 to 180 feet) of very dense, massive, fractured, loamy glacial till of the Wolf Creek or Alburt Formations with or without a loess/eolian sand mantle (Peoria Formation) or thin loamy sediment mantle (named erosion surface sediment) may overlie intervening clayey Farmdale/Sangamon Gessol. This mapping unit can be buried by unnamed erosion surface sediments, loess or alluvium and is shown only in the cross-section.
- PRE-ILLINOIS EPISODE**
- Su** - **Bedrock Exposures** (Silurian Gowar and Scotch Grove Formations) Fossiliferous dolostones with packstone, wackestone to mudstone fabrics. This unit is the primary bedrock aquifer and aggregate resource for the Cedar Bluff Quadrangle area. The Gowar can range from 0 to 30 meters (0 to 100 feet) in thickness. It includes laminated unfossiliferous and fossiliferous mounded facies. Underlying the Gowar is the Scotch Grove Formation. The Scotch Grove is a fossiliferous dolostone, including mounded (dipping strata) and intermound (horizontally bedded) strata. The Scotch Grove reaches a maximum thickness of 60 to 80 meters (197 to 262 feet).
- Paleozoic
Silurian System**
- Water Features** Rivers, lakes and small ponds formed by blockage of drainageways and river channels.
 - Drill Holes**



Base map from USGS Cedar Bluff 7.5' Digital Raster Graphic (IGS GIS file DRGO44C.TIF) which was scanned from the Cedar Bluff 7.5' Topographic Quadrangle map, published by US Geological Survey in 1965. Topographic contours and land features based on 1963 aerial photography, field checked in 1965. Land elevation contours (10' interval) based on NGVD 1929.

Iowa Geological Survey digital cartographic file CedarBluffQuad07.mxd, version 7/30/07 (ArcGIS 9.1). Map projection and coordinate system based on Universal Transverse Mercator (UTM) Zone 15, datum NAD83.

The map and cross section are based on interpretations of the best available information at the time of mapping. Map interpretations are not a substitute for detailed site specific studies.

COOPERATIVE MAPPING WITH THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) SURFICIAL GEOLOGIC MAPS OF THE CEDAR BLUFF AND STANWOOD 1:24,000 QUADRANGLES Phase 2

Iowa Geological Survey
Open File Map 2007-4
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