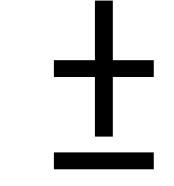
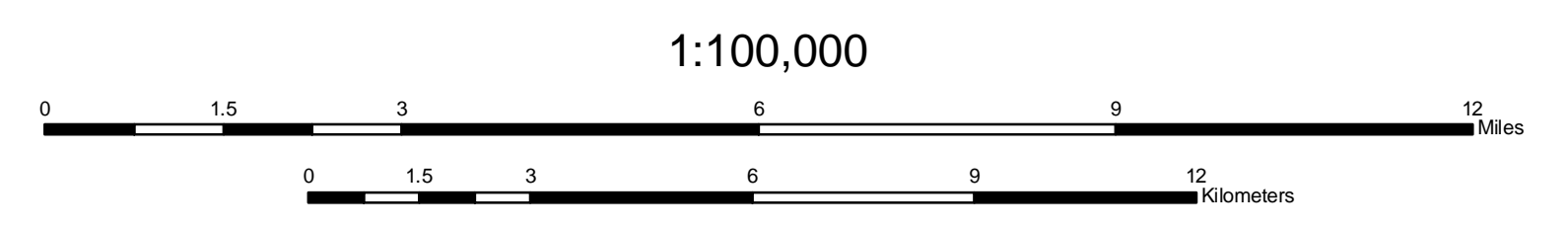
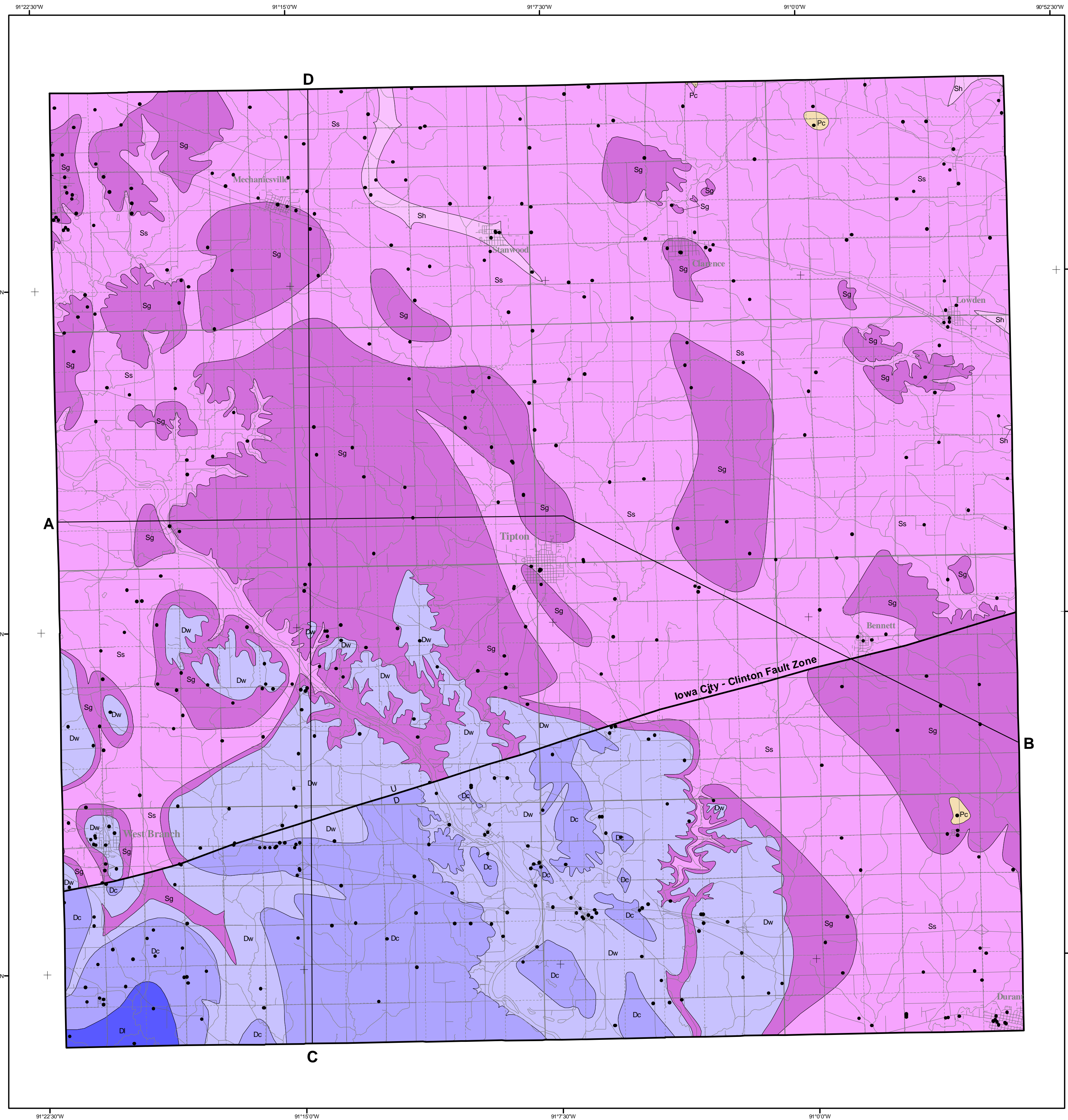


# Bedrock Geology of Cedar County, Iowa



## LEGEND

### CENOZOIC

#### QUATERNARY SYSTEM

**Qu** - **Undifferentiated unconsolidated sediment**. Consists of loamy soils developed in loess and glacial till of variable thickness, and alluvial clay, silt, sand and gravel. Unit shows only on cross-section, not on map.

### PALEOZOIC

#### PENNSYLVANIAN SYSTEM

**Pc** - **Sandstone and shale** (Caseyville Formation). Lower Pennsylvanian (Morona). Maximum thickness 25 ft (8 m). Primary lithologies: sandstone (quartzarenite), shale, gray. Secondary lithologies: coal, carbonaceous shale; siltstone. Occurs as erosional outliers and karst fills in Silurian and Devonian strata.

#### DEVONIAN SYSTEM

**Dl** - **Shale** (Lime Creek Formation). Upper Devonian (upper Frasnian). Maximum thickness 25 ft (8 m). Primary lithology: shale, gray to green-gray, calcareous. Occurs only in southwestern-most part of county.

**Dc** - **Limestone and dolomite** (Cedar Valley Group). This group includes the Little Cedar, Coralville, Lithograph City formations. Middle to Upper Devonian (upper Givetian-lower Frasnian). Maximum thickness 120 ft (36 m). Primary lithologies: limestone and dolomite, fossiliferous, part argillaceous. Secondary lithologies: nodular chert; shale; dolomite.

**Dw** - **Dolomite** (Wapsipicon Group). This group includes the Otis and Pincon Ridge formations. Middle Devonian (upper Eifelian-lower Givetian). Maximum thicknesses 60-110 ft (18-34 m). Primary lithology Otis Fm.: dolomite, part vuggy. Primary lithologies Pincon Ridge Fm.: dolomite, laminated to argillaceous; limestone, dense, subthriftophytic, partly to wholly brecciated. Secondary lithologies: shale, dolomitic to sandy. Minor: chert and chalcodony; sandstone.

#### SILURIAN SYSTEM

**Sg** - **Dolomite** (Gower Formation). This formation includes the Anamosa and Brady members. Silurian (Wenlock-Ludlow). Maximum thickness 130 ft (40 m). Primary lithologies: dolomite, prominently laminated in part (Anamosa Mbr.); dolomite, fossiliferous to vuggy, carbonate mound facies (Brady Mbr.). Minor: nodular chert; intrastratific dolomite.

**Ss** - **Dolomite** (Scotch Grove Formation). This formation includes the Welton, Buck Creek Quarry, Waubeek, Palisades-Kepler, Johns Creek Quarry members. Lower Silurian (upper Llandovery-Wenlock). Maximum thickness generally <160 ft (49 m); locally to 250 ft (75 m) where upper strata are developed as large carbonate mounds (Palisades-Kepler Mbr.). Primary lithologies: dolomite, fossil-stodlike to vuggy, part very crinoidal; dolomite, cherty to very cherty, dense. Secondary lithologies: dolomite, mounded facies (dipping strata), part very fossiliferous to vuggy. Minor: dolomite, slightly argillaceous; quartz druse, chalcodony.

**Sh** - **Dolomite** (Hopkinton and Blanding Formations). Lower Silurian (Llandovery). Maximum thickness 100 ft (30 m). Primary lithologies: dolomite, fossil-moldic to vuggy, non-cherty to very cherty. Secondary lithologies: chert, nodular to bedded (Blanding, lower Hopkinton). Interval not found in outcrop in Cedar County; unconformably overlies Upper Ordovician Maquoketa Shale.

#### ORDOVICIAN SYSTEM

**Om** - **Shale** (Maquoketa Formation). Upper Ordovician (Richmondian). Known thickness in Cedar County 220 ft (67 m). Primary lithology: shale, green-gray to brown gray. Secondary lithology: dolomite. Unit does not form the bedrock surface anywhere in Cedar County (shown on cross sections only).

• **Drill Holes**

Base map from Iowa DNR NRCIS Library (Cedar County GIS files) derived from USGS 1:100,000 scale DLG. Geoserver: TIGER file and GIS FILES files.  
Iowa Geological Survey digital cartographic file CedarCo\_Bedrock08.mxd, version 8/28/08 (ArcGIS 9.2). Map projection and coordinate system based on Universal Transverse Mercator (UTM) Zone 15, datum NAD83. Map and cross-sections 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)

### Final Phase: Bedrock Geologic Map of Cedar County

#### 1:100,000

Iowa Geological Survey  
Open File Map OFM-08-7  
August 2008

prepared by  
**Brian J. Witke and Raymond R. Anderson**  
Iowa Geological Survey, Iowa City, Iowa

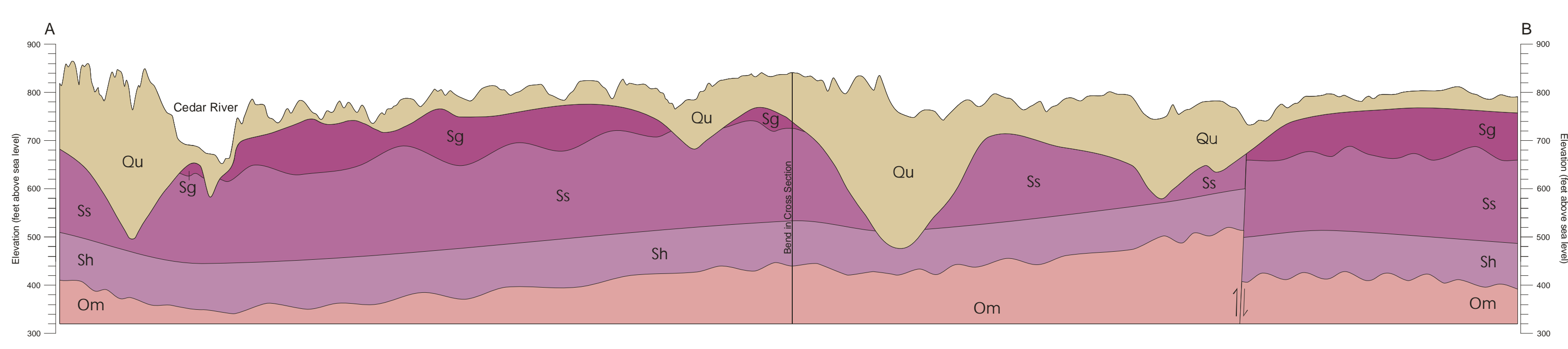
Iowa Department of Natural Resources, Richard Leopold, Director  
Iowa Geological Survey, Robert D. Libra, State Geologist

Supported in part by the U.S. Geological Survey  
Cooperative Agreement Number 07HQAC00087  
National Cooperative Geologic Mapping Program (STATEMAP)

### ACKNOWLEDGEMENTS

Recognized for contributions to map's production: Stephanie Tassier Surine for assistance cross-section preparation and Jim Gliglerano, Geographic Information Section, for map layout, design and printing.

### GEOLOGIC CROSS SECTION A-B



### GEOLOGIC CROSS SECTION C-D

