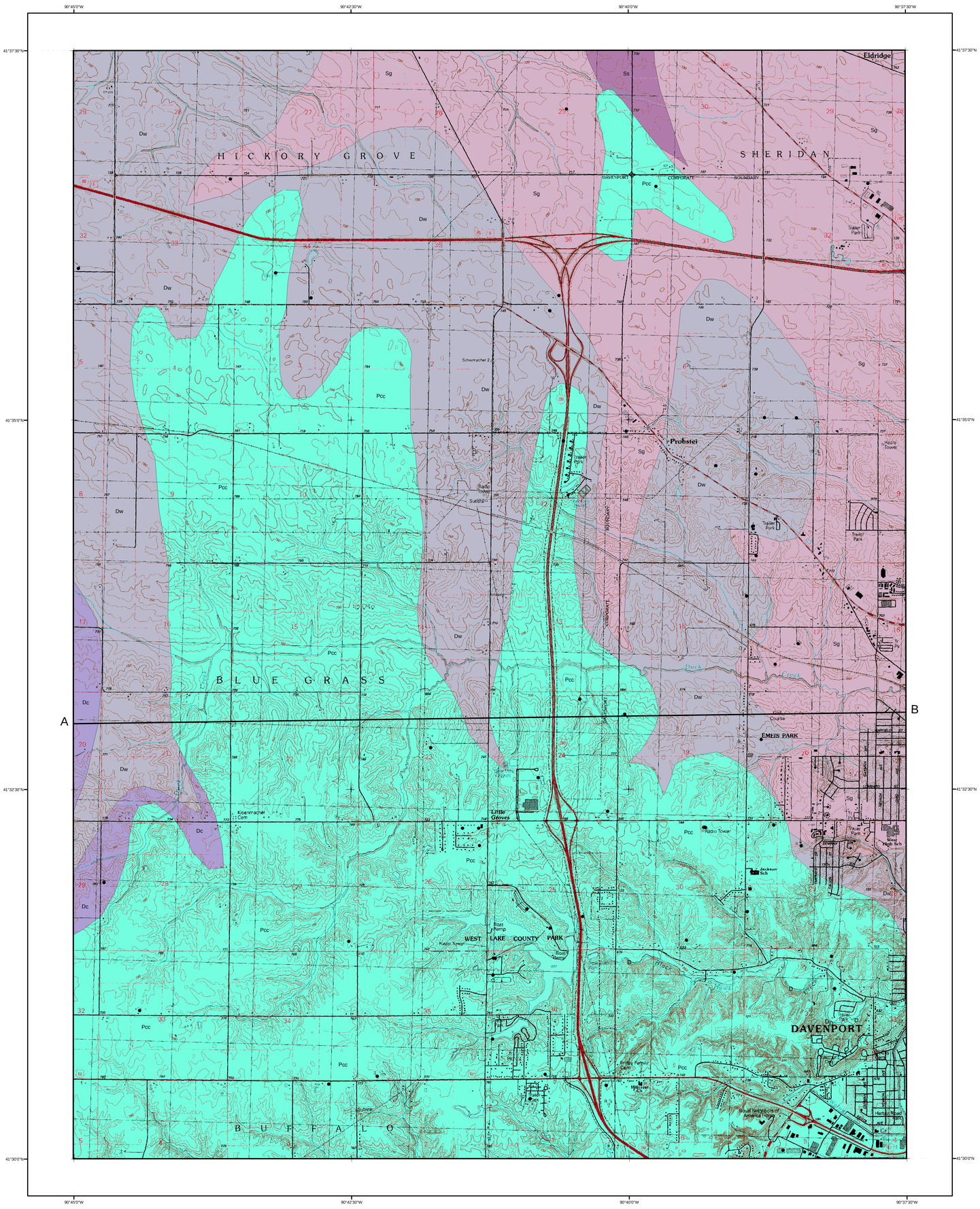
Bedrock Geology of the Davenport West (Iowa) 7.5' Quadrangle

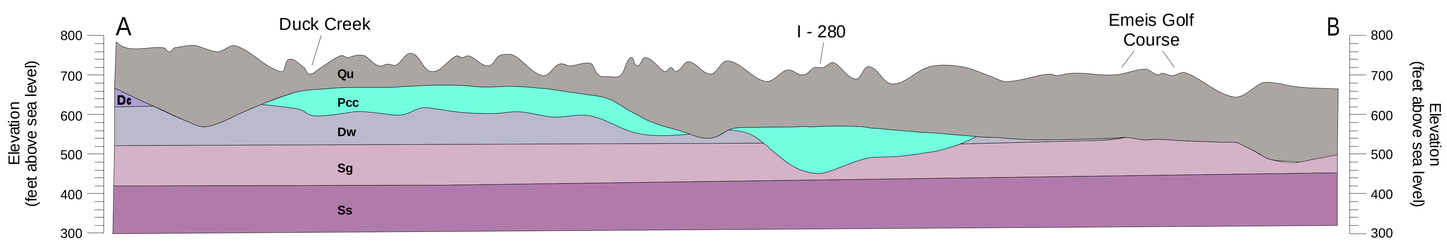


1:24,000

0 0.5 1 2 3 4 Miles

0 0.5 1 2 3 4 Kilometers

GEOLOGIC CROSS-SECTION A-B



BEDROCK GEOLOGY OF THE DAVENPORT WEST 7.5' QUADRANGLE, SCOTT COUNTY, IOWA

Iowa Geological Survey
Open File Map OFM-09-03
June 2009

prepared by

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ACKNOWLEDGMENTS

New subsurface geologic data was generated by the University of Iowa students Sarah Byram and Kyle Bracken who produced descriptive logs of water well drill samples. Deborah Quade of Iowa Geological Survey (IGS) lent support with Quaternary field and office expertise; Murray Perdue (IGS) prepared well samples for stratigraphic logging; Ray Anderson (IGS) provided updated bedrock topography data; Brian Witzke (IGS) provided valued information concerning the Silurian and Devonian stratigraphy of the area; and Chris Kahle and Andy Asell (IGS) provided GIS mapping technical help.

LEGEND

CENOZOIC

QUATERNARY SYSTEM

Qu — **Qu - Undifferentiated unconsolidated sediment** Consists of loamy soils developed in loess and glacial till of variable thickness, and alluvial clay, silt, sand and gravel, with a maximum thickness locally exceeding 60 m (200 ft). Unit shown only on cross-section, not on map.

PALEOZOIC

PENNSYLVANIAN SYSTEM

Pcc — **Pcc – Shale, Siltstone and Sandstone** (Cherokee Group and Caseyville Formation undifferentiated) Lower and Middle Pennsylvanian. The thickness of this formation may exceed 60 m (200 ft), but in general is less than 30 m (100 ft). Primary lithologies includes gray shale, siltstone, and minor sandstone. Secondary lithologies include black carbonaceous shale and coal; plant fossils, pyrite, and siderite pellets & concretions may be present.

DEVONIAN SYSTEM

Dc — **Dc - Limestone** (Cedar Valley Group) Middle Devonian. This map unit includes the Little Cedar Formation, and reaches a maximum thickness of 9 m (30 ft). The Little Cedar is composed of fossiliferous to sparsely fossiliferous limestone and argillaceous limestone containing a diverse marine fauna including echinoderms, corals, brachiopods and bryozoans; bioturbated fabrics are common.

Dw — **Dw - Dolomite, Limestone, Shale, and minor Sandstone** (Wapsipinicon Group) Middle Devonian. This map unit includes the Otis and the Pinicon Ridge formations, with a total thickness between 18 and 29 m (60-95 ft). The Otis Formation is dominated by lithographic to sublithographic, pelletal limestone, with minor dolomite near its base. The Pinicon Ridge Formation is characterized by laminated or brecciated, unfossiliferous limestone and dolomite with minor shale.

SILURIAN SYSTEM

Sg — **Sg - Dolomite** (Gower Formation) Silurian. Thickness of this formation ranges between 27 and 37 m (90-120 ft), and the lithology is dominated by porous dolomite, in part laminated, and vuggy. Brachiopods and corals are common in mounded facies.

Ss — **Ss - Dolomite and minor Chert** (Scotch Grove Formation) Lower Silurian. The thickness of this interval ranges between 35-45 m (120-150 ft), and is characterized by fossil moldic (especially crinoidal) dolomite. Vugs and pores are common in most part, and minor chert may occur in lower part of the formation.

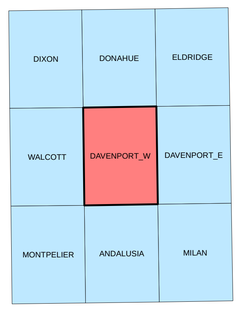
● **Drill Holes**

D **Outcrops**

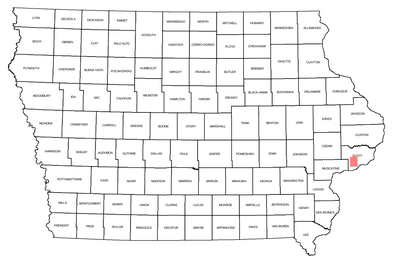
Correlation of Map Units

AGE (Ma)	SYSTEM	SERIES	STAGE	MAP UNIT
	QUATERNARY			Qu
2.58				
310	PENNSYLVANIAN	Middle	Desmoinesian	Pcc
			Atokan	?
315		Lower	Morrowan	Pcc
390	DEVONIAN	Middle	Givetian	Dc
				Dw
395			Eifelian	
423	SILURIAN	Wenlockian	Ludfordian	
			Gorstian	
			Homerian	Sg
428			Sheinwoodian	
		LLandoverian	Telychian	Ss
436			Aeronian	
439			Rhuddanian	

Adjacent 7.5' Quadrangles



Locator Map



Base map from USGS Davenport West 7.5' Digital Raster Graphic (IGS GIS file DRGQ49.TIF) which was scanned from the Davenport West 7.5' Topographic Quadrangle map, published by US Geological Survey in 1991
Topographic contours and land features based on 1986 aerial photography, field checked in 1991
Land elevation contours (10' interval) based on NGVD 1929.

Iowa Geological Survey digital cartographic file DavenportWestquad_bedrock09.mxd, version 6/18/09 (ArcGIS 9.2)
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.