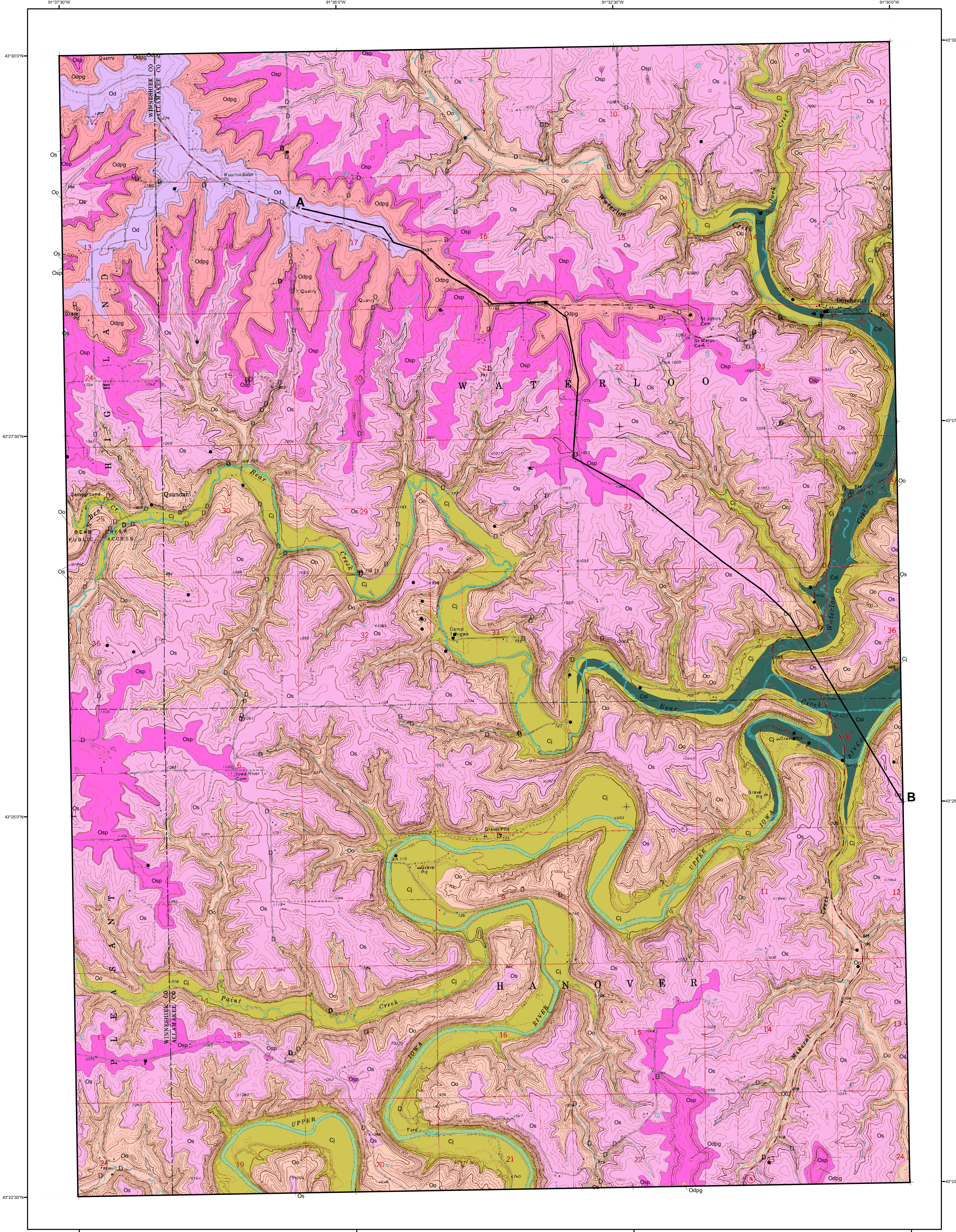


# Bedrock Geology of the Dorchester (Iowa) 7.5' Quadrangle



## LEGEND

### CENOZOIC

#### QUATERNARY SYSTEM

**Qu** - **Undifferentiated unconsolidated sediment** Consists of loamy soils developed in loess of variable thickness, and alluvial clay, silt, sand and gravel. This unit only shown on the cross-section and not on the map.

### PALEOZOIC

#### ORDOVICIAN SYSTEM

**Od** - **Limestone** (Dunleith Formation) Limestone with minor thin interbedded shale. This is the lower of two successive major cavern and karst-forming bedrock map units of the Galena Group. The formation consists of fossiliferous limestone and argillaceous limestone with common chert nodules; only the lower 15 m (50 ft) of this formation occurs in the northwest portion of the map. Springs may occur near the base and sinkholes and karst features may be present.

**Odog** - **Shale, Limestone, and Dolomite** (Decorah, and underlying Platteville, and Glenwood formations) A unit of green-grey shales, dense limestones, argillaceous limestones, and dolomite with average thickness of 25 to 26 m (80 to 85 ft). The upper division, the Decorah Formation, consists of 12 to 14 m (39 to 46 ft) of interbedded fossiliferous green-grey shale and limestone. The middle division, the Platteville Formation, consists of 7.5 m (25 ft) of limestone, argillaceous limestone, and dolomite; it serves as a source of quarried aggregate along with the underlying St. Peter. It forms distinctive elongate ridges in upland landscape positions. The lower division, the Glenwood Formation, consists of 2 to 3 m (7 to 9 ft) of green-grey shale with minor siltstone to fine sandstone. This map unit, especially the Decorah and Glenwood subdivisions, is rarely exposed except in man-made excavations or cuts.

**Osp** - **Sandstone** (St. Peter Sandstone Formation) A moderately resistant unit forming distinctive elongate ridges in upland landscape positions, especially where capped by Platteville Formation limestone of map unit Odog. It generally ranges from 18 to 23 m (60 to 75 ft) in thickness, but may attain thicker sections where it overlies paleotopographic low areas on the high-relief surface of unconformity with underlying units. A white to tan, and occasionally red to orange-stained, pure quartz sandstone, it ranges from hard cemented at the top to friable. Locally, may serve as a source of fill sand.

**Os** - **Dolomite and Sandstone** (Shakopee Formation) A variably resistant slope to ledge-forming unit ranging in thickness from 17 to 30 m (55 to 100 ft). Composed of interbedded dolomite, sandy dolomite and sandstone with a prominent 8 to 10 m (26 to 33 ft) thick horizontally stratified sandstone (New Richmond Sandstone Member) occupying its lower part. Contains some chert nodules, and has distinctive oolitic and stromatolite facies. Small springs locally occur near its base and it may host karst caverns.

**Oo** - **Dolomite** (Oneta Formation) A highly resistant ledge and cliff-forming unit of up to 60 m (200 ft) of dolomite that has chert nodules, small calcite crystal filled cavities, and stromatolite facies. May host karst cavities, caverns, and springs. Interbeds of fine-grained sandstone occur in the lower 8 m (25 ft). Serves as a source of high quality aggregate.

#### CAMBRIAN SYSTEM

**Cj** - **Sandstone** (Jordan Sandstone Formation) A friable to weakly cemented quartzose and feldspathic, fine- to coarse-grained sandstone, that typically displays well-developed cross-stratification. Thickness varies between 28 to 34 m (90 to 110 ft).

**Csl** - **Siltstone and Dolomite** (St. Lawrence Formation) A unit of thin-bedded dolomitic siltstone and silty dolomite with variable glauconite pellet content. Thickness averages 20 m (65 ft). Not known to be exposed, but present at the bedrock surface beneath alluvium of major drainages in the eastern portion of the map area.

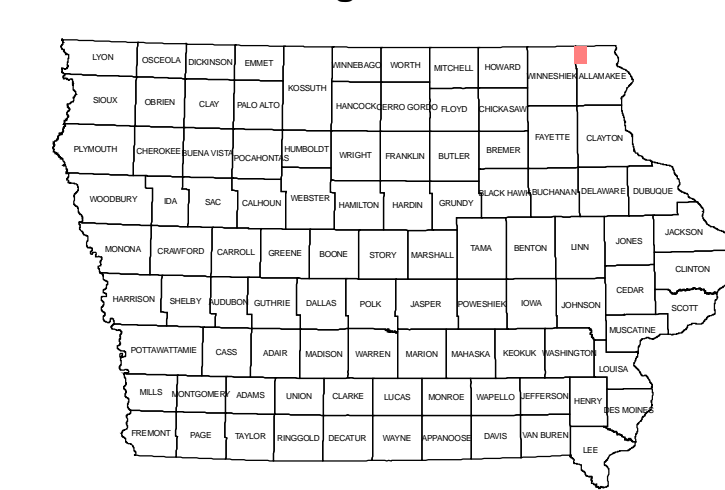
• **Drill Holes**

D **Outcrops**

#### Adjacent 7.5' Quadrangles

SPRING GROVE	WILMINGTON	EITZEN
HIGHLANDVILLE	<b>DORCHESTER</b>	WALKON, NW
FREEPORT	HANOVER	WALKON

#### Quadrangle Location

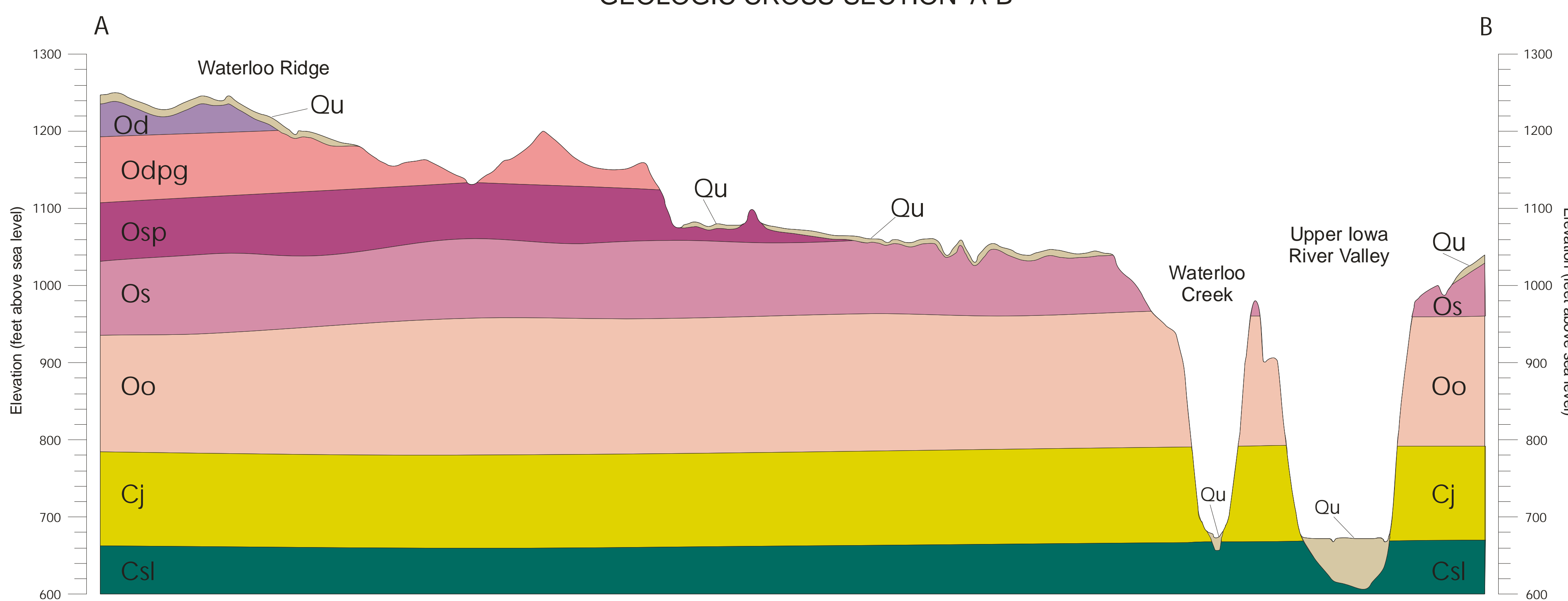


Base map from USGS Dorchester 7.5' Digital Raster Graphic (IGS GIS file DRGB42.TIF) which was scanned from the Dorchester 7.5' Topographic Quadrangle map, published by US Geological Survey in 1981. Topographic contours and land features based on 1975 aerial photography, field checked in 1977. Land elevation contours (20' interval) based on NGVD 1929.

Iowa Geological Survey digital cartographic file Dorchester08Quad\_bedrock.mxd, version 8/18/08 (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.

## GEOLOGIC CROSS-SECTION A-B



## GEOLOGIC MAPPING OF THE UPPER IOWA RIVER WATERSHED: PHASE 4: Dorchester 7.5' Quadrangle

Iowa Geological Survey  
Open File Map OFM-08-5  
August 2008

prepared by

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