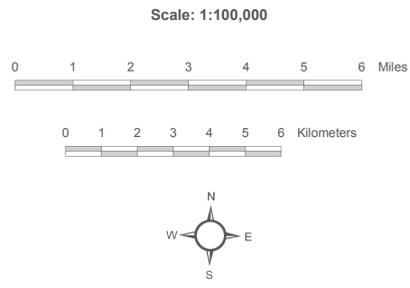
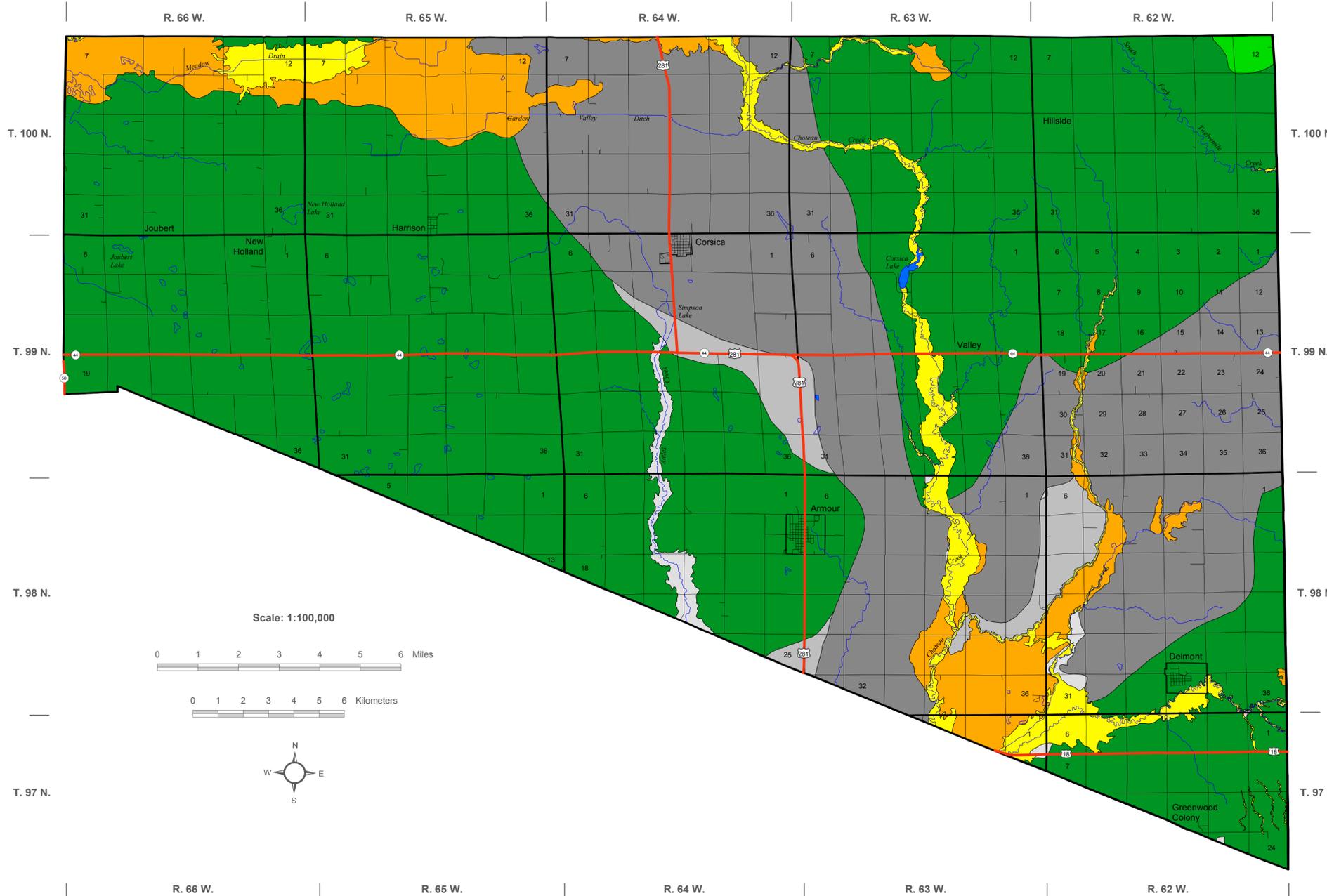


First Occurrence of Aquifer Materials in Douglas County, South Dakota

Department of Environment and Natural Resources
 Division of Financial and Technical Assistance
 Geological Survey
 Aquifer Materials Map 28
 Ann R. Jensen, 2008

State of South Dakota
 M. Michael Rounds, Governor

South Dakota Geological Survey
 Derric L. Iles, State Geologist



Explanation

This map is intended for use as a tool to aid in identifying areas underlain by aquifer material. The aquifer materials shown on this map are categorized below. This map does not show individual aquifers. There may be more than one type of aquifer material present in an area. However, only the aquifer material that would be first encountered is shown. Within the boundaries of any given map unit, there may be localized areas where aquifer material is absent. The thickness and permeability of aquifer material may vary significantly. Also, no attempt was made to distinguish between saturated and unsaturated material. Therefore, not all of the areas defined on this map may be an aquifer. Site-specific information should always be examined when making land management or water development decisions.

<p>First occurrence is generally less than or equal to 50 feet below land surface</p>	<ul style="list-style-type: none"> Alluvium: Consists of silt and clay with minor amounts of sand and gravel Sand and Gravel: First occurrence is generally at land surface; may contain minor amounts of clay and silt Sand and Gravel: First occurrence is generally below land surface; may not be uniform in depth and thickness and may be discontinuous in lateral extent
<p>First occurrence is generally greater than 50 feet and less than or equal to 100 feet below land surface</p>	<ul style="list-style-type: none"> Sand and Gravel: May contain minor amounts of clay and silt; may not be uniform in depth and thickness and may be discontinuous in lateral extent Niobrara Formation: A light- to dark-gray speckled marl with some chalk, limestone, and thin shaly beds, weathers white to orange-yellow
<p>First occurrence is generally greater than 100 feet below land surface</p>	<ul style="list-style-type: none"> Sand and Gravel: May contain minor amounts of clay and silt; may not be uniform in depth and thickness and may be discontinuous in lateral extent Niobrara Formation: A light- to dark-gray speckled marl with some chalk, limestone, and thin shaly beds, weathers white to orange-yellow

— Major highway	~ River or stream
— Road	● Lake
— Township boundary	○ Slough or intermittent lake

For township section numbering system, see T. 99 N., R. 62 W.

This map was developed from lithologic logs and published reports. The major sources of information were:

Christensen, C.M., 1974, *Geology and water resources of Bon Homme County, South Dakota; Part I: Geology*; South Dakota Geological Survey Bulletin 21, 48 p.

— 1989, *Geology of Davison and Hanson Counties, South Dakota*; South Dakota Geological Survey Bulletin 33, 22 p.

Hansen, D.S., 1983, *Water resources of Hanson and Davison Counties, South Dakota*; U.S. Geological Survey Water-Resources Investigations Report 83-4108, 55 p.

Hedges, L.S., 1972, *Sand and gravel resources in Charles Mix and Douglas Counties, South Dakota*; South Dakota Geological Survey Circular 42, 6 p.

— 1975, *Geology and water resources of Charles Mix and Douglas Counties, South Dakota; Part I: Geology*; South Dakota Geological Survey Bulletin 22, 43 p.

Jensen, A.R., 2004, *First occurrence of aquifer materials in Aurora County, South Dakota*; South Dakota Geological Survey Aquifer Materials Map 20, scale 1:100,000.

— 2007, *First occurrence of aquifer materials in Hutchinson County, South Dakota*; South Dakota Geological Survey Aquifer Materials Map 25, scale 1:100,000.

Jorgensen, D.G., 1971, *Geology and water resources of Bon Homme County, South Dakota; Part II: Water resources*; South Dakota Geological Survey Bulletin 21, 61 p.

Kume, J., 1972, *Major aquifers in Charles Mix and Douglas Counties, South Dakota*; South Dakota Geological Survey Information Pamphlet 2, 6 p.

— 1977, *Geology and water resources of Charles Mix and Douglas Counties, South Dakota; Part II: Water resources*; South Dakota Geological Survey Bulletin 22, 31 p.

Lindgren, R.J., and Hansen, D.S., 1990, *Water resources of Hutchinson and Turner Counties, South Dakota*; U.S. Geological Survey Water-Resources Investigations Report 90-4093, 100 p.

Schulz, L.D., and Smith, K.N., 2004, *First occurrence of aquifer materials in Davison County, South Dakota*; South Dakota Geological Survey Aquifer Materials Map 16, scale 1:100,000.

South Dakota Geological Survey Lithologic logs database.

Tomhave, D.W., and Schulz, L.D., 2004, *Bedrock geologic map showing configuration of the bedrock surface in South Dakota east of the Missouri River*; South Dakota Geological Survey General Map 9, scale 1:500,000.

Digital cartography by B.A. Fagnan and L.D. Schulz
 Layout edited by C.K. Odenbrett



Index map of South Dakota showing the location of Douglas County

The Geological Survey, Department of Environment and Natural Resources, engages in an ongoing data collection and interpretation process. An outcome of that process is to reflect those interpretations on maps such as this one. Reasonable efforts have been made to ensure that this map accurately reflects the source data used in its preparation. This map is date specific. As additional data become available, geologic interpretations may be revised and the map may be updated by the Geological Survey. This map should not be enlarged or otherwise used in an attempt to interpret more detail than can be seen at the 1:100,000 scale.

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