

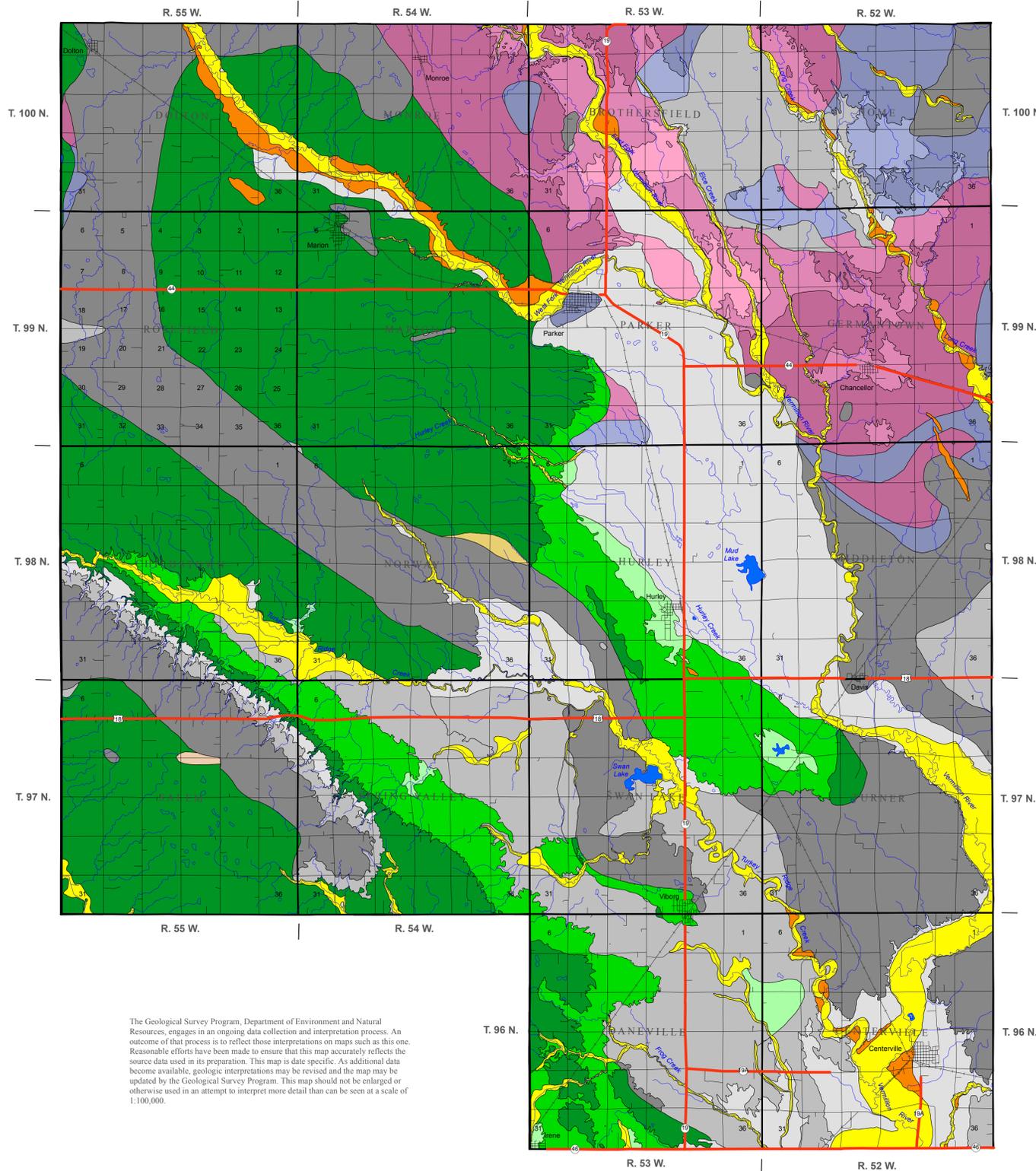
First Occurrence of Aquifer Materials in Turner County, South Dakota



Department of Environment and Natural Resources
Division of Financial and Technical Assistance
Geological Survey Program
Aquifer Materials Map 36
Ann Jensen, 2015

State of South Dakota
Dennis Daugaard, Governor

South Dakota Geological Survey
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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.

First occurrence is generally less than or equal to 50 feet below land surface

- Alluvium:** Consists of clay and silt 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 contain minor amounts of clay and silt, may not be uniform in depth and thickness and may be discontinuous in lateral extent
- Niobrara Formation:** First occurrence is generally below land surface, light- to medium-blue-gray marl and white to cream colored limestone, weathers white to dark-yellowish-orange
- Cretaceous Undifferentiated:** First occurrence is generally below land surface, chalk or quartzose sandstone, interbedded with clay or black shale; may include "quartzite wash"
- Sioux Quartzite:** First occurrence is generally below land surface; pink to red, extremely hard, fine- to medium-grained, well-rounded quartz sand, silica cemented orthoquartzite; sometimes conglomeric and jointed; is generally not an aquifer, but may yield water from fractures

First occurrence is generally greater than 50 feet and less than or equal to 100 feet below land surface

- 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:** Light- to medium-blue-gray marl and white to cream colored limestone
- Cretaceous Undifferentiated:** Chalk or quartzose sandstone, interbedded with clay or black shale; may include "quartzite wash"
- Sioux Quartzite:** Pink to red, extremely hard, fine- to medium-grained, well-rounded quartz sand, silica cemented orthoquartzite; sometimes conglomeric and jointed; is generally not an aquifer, but may yield water from fractures

First occurrence is generally greater than 100 feet below land surface

- 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
- Tertiary Undifferentiated:** Consists of clay, silt, and fine sand, may not be uniform in depth and thickness and may be discontinuous in lateral extent
- Niobrara Formation:** Light- to medium-blue-gray marl and white to cream colored limestone
- Cretaceous Undifferentiated:** Chalk or quartzose sandstone, interbedded with clay or black shale; may include "quartzite wash"
- Dakota Formation:** Brown, medium-grained sandstone interbedded with shale layers
- Sioux Quartzite:** Pink to red; extremely hard, fine- to medium-grained, well-rounded quartz sand, silica cemented orthoquartzite; sometimes conglomeric and jointed; is generally not an aquifer, but may yield water from fractures

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

The Geological Survey Program, 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 Program. This map should not be enlarged or otherwise used in an attempt to interpret more detail than can be seen at a scale of 1:100,000.

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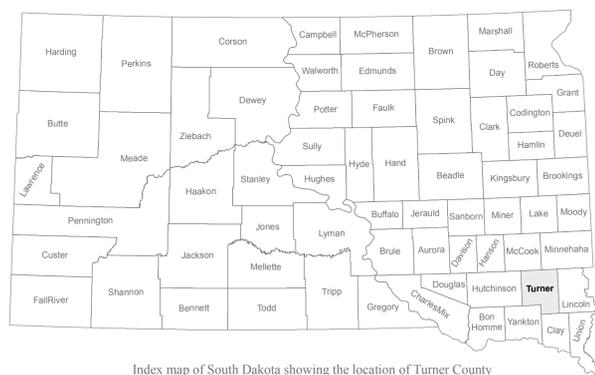
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For township section numbering system, see T. 99 N., R. 55 W.

- River or stream
- Lake
- Slough or intermittent lake
- Major highway
- Road
- Railroad
- Township boundary

Scale: 1:100,000



Index map of South Dakota showing the location of Turner County