First Occurrence of Aquifer Materials in Davison County, South Dakota

Department of Environment and Natural Resources
Division of Financial and Technical Assistance
Geological Survey
Aquifer Materials Map 16
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State of South Dakota
M. Michael Rounds, Governor

South Dakota Geological Survey
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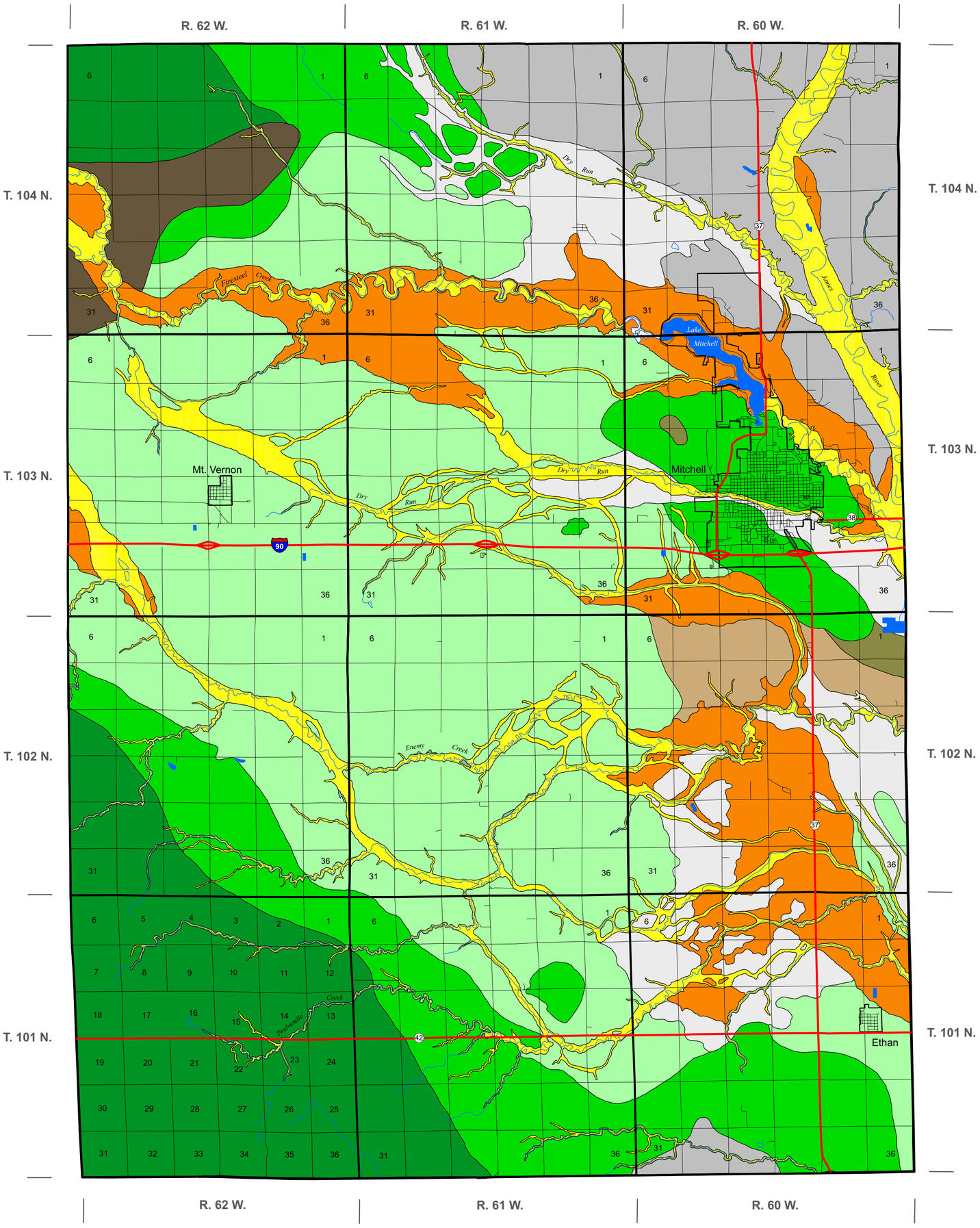

Explanation

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
- **Codell Sandstone Member of the Carlile Shale:** Consists of white to green to light gray to dark gray, fine-grained sandstone with minor shale and limestone interbeds; may be weathered light yellow to brown; may be well cemented to lightly cemented
  - First occurrence is generally at land surface
  - First occurrence is generally below land surface
- **Niobrara Formation:** Consists of light- to medium-blue-gray marl and white to cream-colored limestone; may be weathered to white to a dark yellow-orange
  - First occurrence is generally at land surface
  - First occurrence is generally below land surface

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:** Consists of light- to medium-blue-gray marl and white to cream-colored limestone; may be weathered to white to a dark yellow-orange
- **Codell Sandstone Member of the Carlile Shale:** Consists of white to green to light gray to dark gray, fine-grained sandstone with minor shale and limestone interbeds; may be weathered light yellow to brown; may be well cemented to lightly cemented

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
- **Niobrara Formation:** Consists of light- to medium-blue-gray marl and white to cream-colored limestone; may be weathered to white to a dark yellow-orange
- **Codell Sandstone Member of the Carlile Shale:** Consists of white to green to light gray to dark gray, fine-grained sandstone with minor shale and limestone interbeds; may be weathered light yellow to brown; may be well cemented to lightly cemented

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

For township section numbering system, see T. 101 N., R. 62 W.

Index map of South Dakota showing the location of Davison County

Scale: 1:100,000

0 1 2 3 4 5 6 Miles

0 1 2 3 4 5 6 Kilometers

N W E S

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

Christensen, C.M., 1989, *Geology of Davison and Hanson Counties, South Dakota*: South Dakota Geological Survey Bulletin 33, 22 p.

Hammond, R.H., 1982, *Sand and gravel resources in Davison County, South Dakota*: South Dakota Geological Survey Information Pamphlet 24, 50 p.

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

_____ 1983b, *Major aquifers in Hanson and Davison Counties, South Dakota*: South Dakota Geological Survey Information Pamphlet 26, 11 p.

Hoff, J.H., Steece, F.V., and Wong, H.D., 1961, *Geology of the Mitchell quadrangle South Dakota*: South Dakota Geological Survey Geologic 15 Minute Quadrangle Map 96, scale 1:62,500

Jorgensen, D.G., 1960, *Geology and ground water resources at Ethan, South Dakota*: South Dakota Geological Survey Special Report 5, 19 p.

South Dakota Geological Survey, Lithologic logs database

Wong, H.D., 1960, *Geology of the Alexandria quadrangle South Dakota*: South Dakota Geological Survey 15 Minute Geologic Quadrangle Map 84, scale 1:62,500

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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