STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

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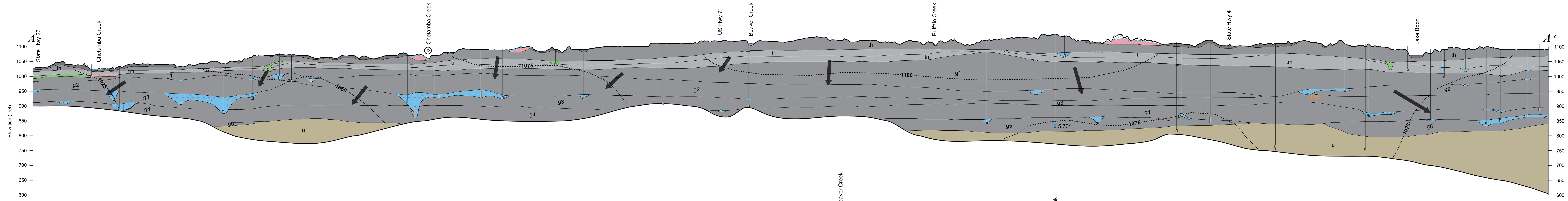
COUNTY ATLAS SERIES
RENVILLE COUNTY
Atlas C-28, Plate 7 of 8
Hydrogeologic Cross Sections
A–A′ through D–D′

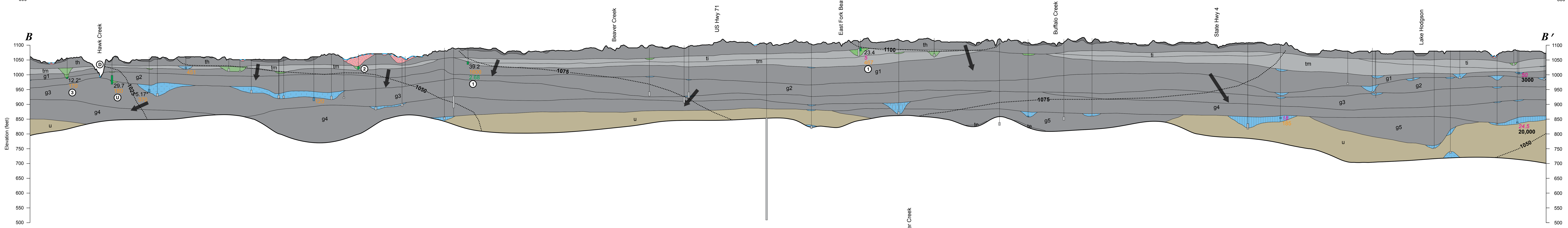
To accompany these atlas components
Report, Map Figures 1–27, Plates 6 and 8

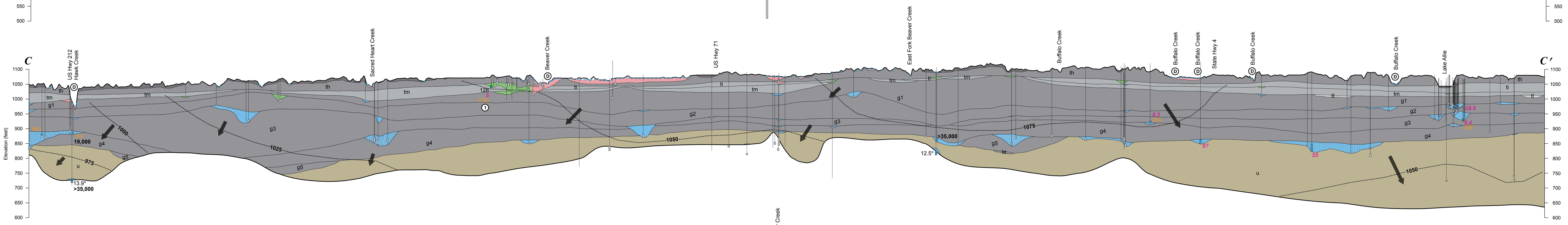
Hydrogeologic Cross Sections

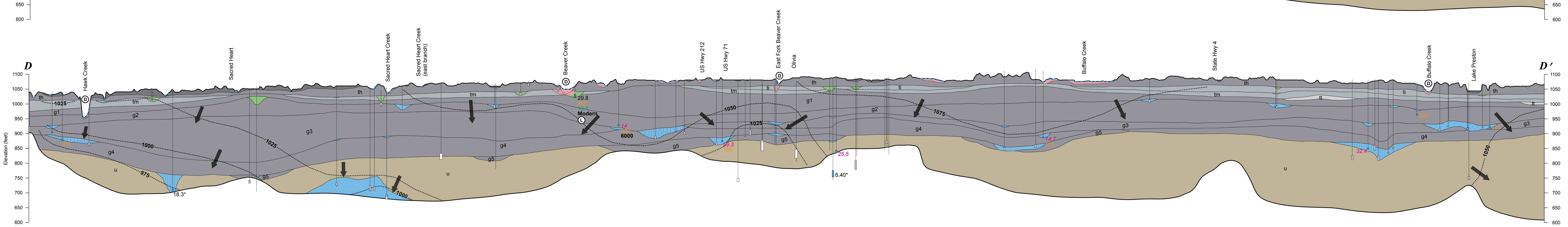
By Randy J. Bradt

2017









CROSS SECTION EXPLANATION

Aquifers and aquitards grouped by stratigraphy

See Report Figure 1 for geologic unit correlation.
Interpreted tritium age is indicated by background color.

Quaternary unconsolidated sediment

Surficial sand and gravel

- ss

Buried aquifers and aquitards

- hl*
- l*
- th*
- si
- ti*
- sm
- tm*
- tt*
- sg
- g1*
- s2
- g2*
- s3
- g3*
- s4
- g4*
- s5
- g5*
- te*
- su
- Undifferentiated sediment (u)
- sz

*aquitard

Quaternary aquitards

Grouped by texture ranging from highest to lowest sand content indicating relative hydraulic conductivity.

Geologic unit code	Percent sand
tt	>50% and ≤60%
ti, tm	>40% and ≤50%
th, g1, g2, g3, g4, g5, te	>30% and ≤40%
hl, l	≤30%

Tritium age

Darker color in small vertical rectangle (well screen symbol) indicates tritium age of water sampled in well. Lighter color indicates interpreted age of water in aquifer.

- Recent: water entered the ground since about 1953 (8 to 15 tritium units [TU]).
- Mixed: water is a mixture of recent and vintage waters (greater than 1 TU to less than 8 TU).
- Vintage: water entered the ground before 1953 (less than or equal to 1 TU).
- Well not sampled for tritium.

Symbols and labels

- 12.5* Chloride concentration. If shown, chloride concentration equals or exceeds 5 parts per million and bromide concentration equals or exceeds 0.07 part per million. (* indicates naturally elevated values)
- 9.3 If shown, arsenic concentration equals or exceeds 5 parts per billion.
- 120 If shown, manganese concentration equals or exceeds 100 parts per billion.
- 2.68 If shown, nitrate concentration equals or exceeds 1 part per million.
- 3000 If shown, groundwater residence time in years as estimated by carbon-14 (^{14}C) isotope analysis.
- General groundwater flow direction
- ····1050···· Approximate equipotential contour; contour interval 25 feet
- Geologic contact
- Land or bedrock surface
- Water table
- Pumping well

Groundwater conditions

1. Water from the surface moves through a thin layer of overlying fine-grained material to an underlying aquifer.
2. Groundwater moves from an overlying surficial aquifer to a buried aquifer.
3. Groundwater moves from an overlying buried aquifer to an underlying buried aquifer.

- D Groundwater discharges to a surface-water body.
- L Groundwater flows laterally.
- U Groundwater flowpath is unknown (deep groundwater, recent or mixed tritium age).

SCALE 1:100 000
VERTICAL EXAGGERATION X 50

1 0 1 2 3 4 5 MILES

1 0 1 2 3 4 5 6 7 8 9 KILOMETERS

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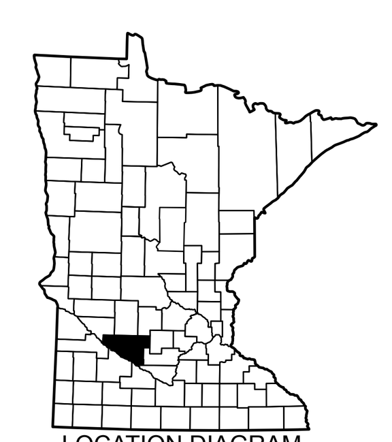
This map was compiled and generated in a geographic information system. Digital data products are available from the DNR County Geologic Atlas Program at mndnr.gov/groundwatermapping.

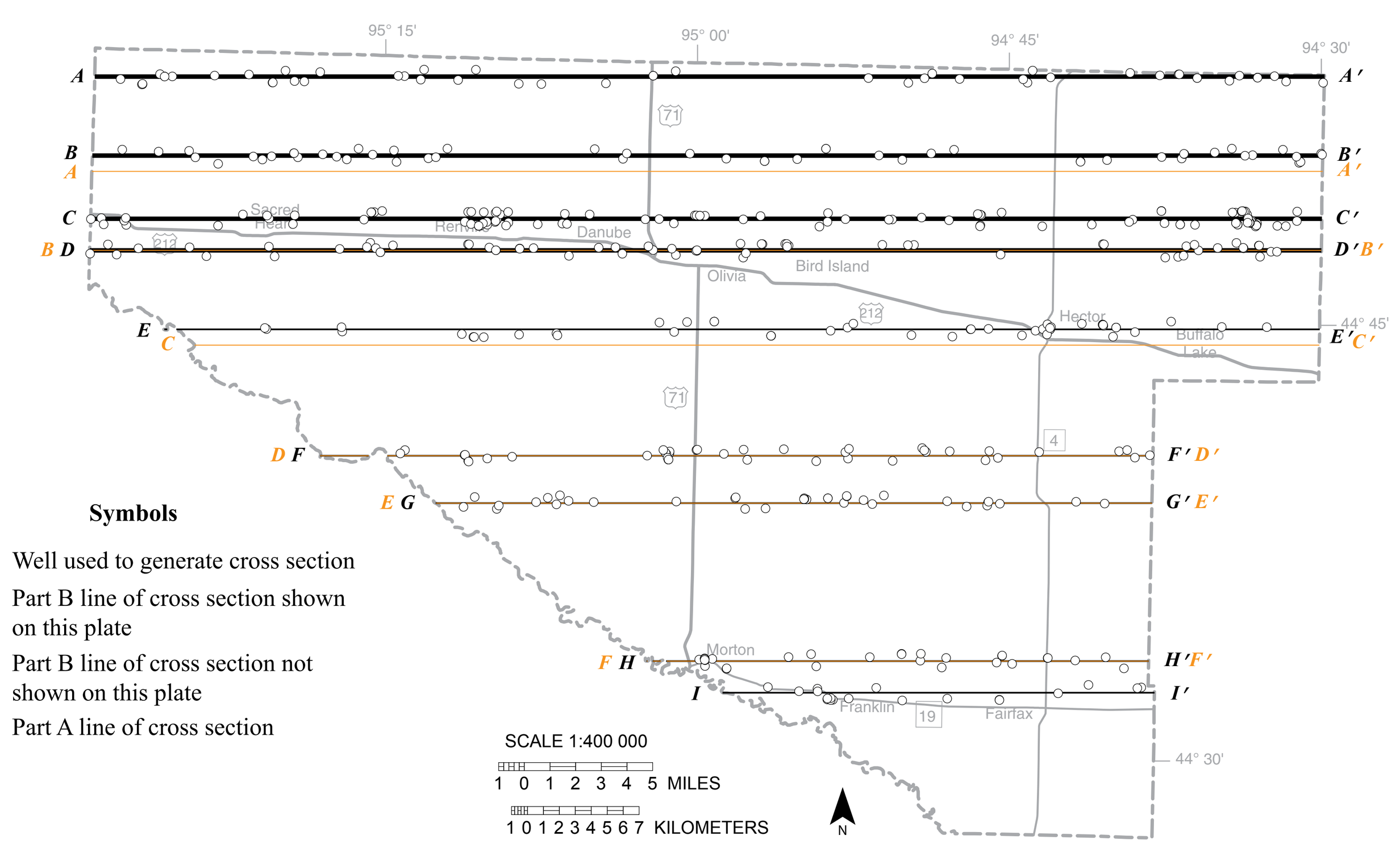
This map was prepared from publicly available information. Every reasonable effort has been made to ensure the accuracy of the factual data on which this map interpretation is based. However, the DNR does not warrant the accuracy, completeness, or any implied uses of these data. Users may wish to verify critical information; sources include both the references in the report and information on file in the offices of the Minnesota Geological Survey and the DNR. Every effort has been made to ensure the interpretation shown conforms to sound geologic and cartographic principles. This map should not be used to establish legal title, boundaries, or locations of improvements.

Base modified from Minnesota Geological Survey, Renville County Geologic Atlas, Part A, 2013.

Universal Transverse Mercator projection, zone 15N, North American Datum of 1983. North American Vertical Datum of 1988.

GIS and cartography by Randy J. Bradt and Holly Johnson. Edited by Ruth MacDonald.


LOCATION DIAGRAM



Symbols

- Well used to generate cross section
- A—A′ Part B line of cross section shown on this plate
- F—F′ Part B line of cross section not shown on this plate
- A—A′ Part A line of cross section

GEOLOGIC ATLAS OF RENVILLE COUNTY, MINNESOTA