



Cross Section Explanation

Aquifers and aquitards
Quaternary unconsolidated
Interpreted tritium age is indicated by background color. See Figure 5 in the report for geologic unit correlation. Overlying white hatching pattern indicates areas with few or no wells, resulting in speculative unit boundaries.

- sc
- pgs
- te
- ou
- bds
- bdt1
- hsi
- ht1
- ist0
- iss1
- ist1
- hsi2
- ht2
- iss2
- ist2
- hsa1
- iss3
- ist3
- hsa2
- hta2
- iss4
- ist4
- hsa3
- iss5
- ist5
- iss6
- ist6
- hsa4
- brs1
- brt1
- brs2
- brt2
- brs3
- brt3
- scs
- sct
- mls1
- mlt1
- sft1
- mls2
- mlt2
- sfs2
- sft2
- mls3
- mlt3
- sfs3
- sft3
- eba1
- eba2
- sks
- skt
- es1
- et1
- es2
- et2
- usw
- utw
- ms
- mt
- uns1
- ups1
- uns2

Bedrock
Ku Undifferentiated cretaceous
pCu Precambrian crystalline bedrock

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

Geologic unit code	Percent sand
ebt3, hta1, hta2, hta3, ist3, ist1, ist2, ist3, ist4, ist5, ist6, skt	>60%
ht0, ht1, ht2, mt	>50% and ≤60%
bdt1, bdt2, brt1, brt2, brt3, et1, et2, sct, sft1, sft2, sft3, utw	>40% and ≤50%
mlt1, mlt2, mlt3	>30% and ≤40%
bdt2, ebt1, ebt2, sc	≤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.

- Modern: water entered the ground since about 1953.
- Mixed: water is a mixture of modern and premodern waters.
- Mostly premodern: tritium not detected and the premodern threshold is below the detection limit.
- Well not sampled for tritium.

Symbols and labels

- 37.6 Chloride: if shown, concentration is ≥5 ppm. (* naturally elevated)
- 26.5 Arsenic: if shown, concentration is ≥1 ppb.
- 3.9 Nitrate: if shown, concentration is ≥1 ppm.
- 2500 Carbon-14 (¹⁴C): estimated groundwater residence time in years
- E Groundwater sample with evaporative signature
- General groundwater flow direction
- Approximate equipotential contour; contour interval 25 feet
- Geologic contact
- Land or bedrock surface
- Water table

Groundwater conditions

- Water from the surface moves through a thin layer of overlying fine-grained material to an underlying aquifer.
- Groundwater moves from an overlying surficial aquifer to a buried aquifer.
- Groundwater moves from an overlying buried aquifer to an underlying buried aquifer.
- Groundwater flows laterally.
- Groundwater flowpath is unknown.
- Groundwater discharges to a surface-water body.

This map was compiled and generated in a geographic information system. Digital data products are available from the DNR Groundwater Atlas Program.

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Base modified from Minnesota Geological Survey, Geologic Atlas of Cass County, 2018.

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

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