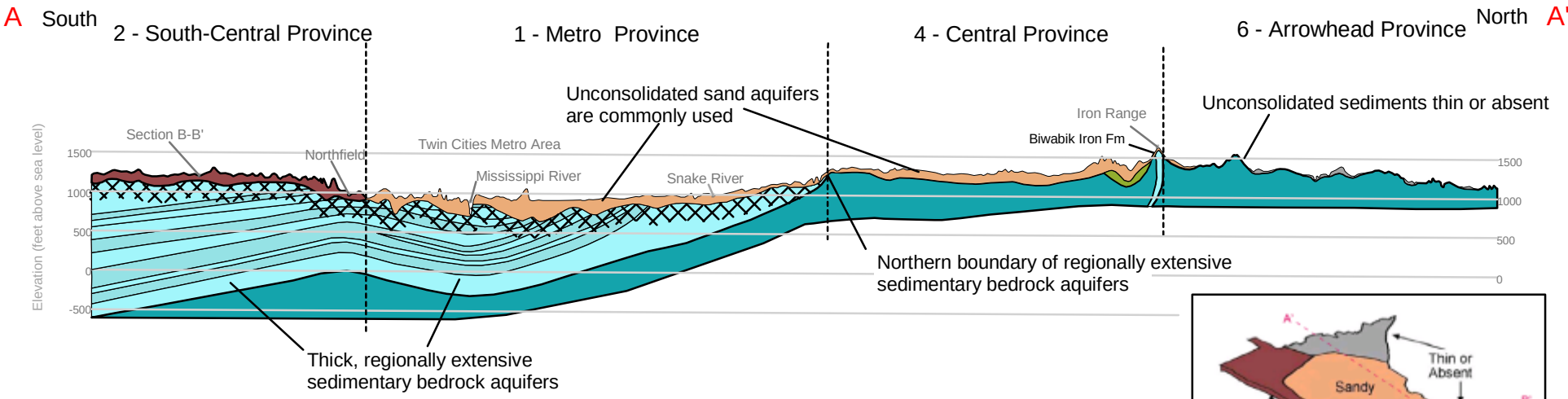
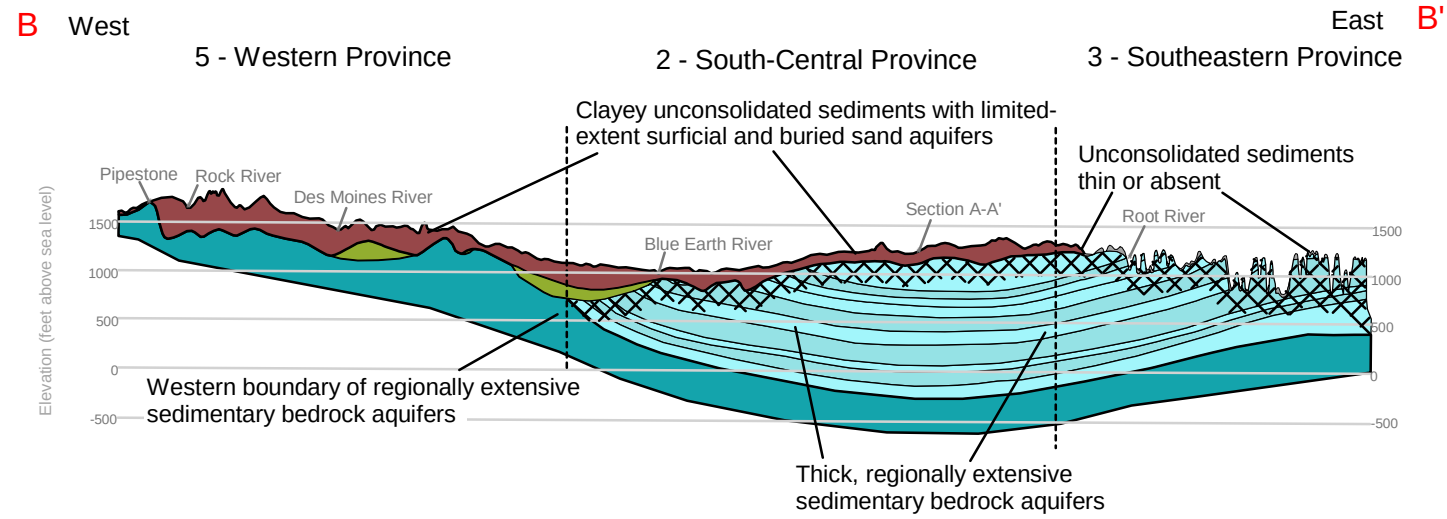
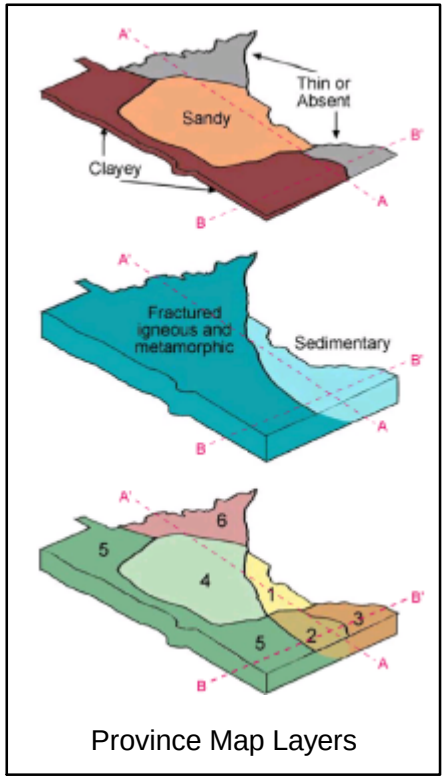
Minnesota Ground Water Provinces - Generalized Cross Sections







Province Map Layers

Explanation

- Clayey unconsolidated sediments with limited-extent sand aquifers (Quaternary)
- Sandy unconsolidated sediments; sand aquifers common (Quaternary)
- Thin, unconsolidated sediments with the exception of sand aquifers (Quaternary) in major river valleys that are frequently used
- Cretaceous shale and sandstone; used locally as water source
- Precambrian bedrock; can provide ground water locally from fractures

Regional sedimentary bedrock

- Bedrock aquifers*
- Confining units*

* Aquifer and confining unit characteristics can vary regionally, locally, and according to depth as described below.

- "Shallow" bedrock conditions - Secondary porosity may be enhanced in both aquifer and confining units as much as 200 feet below top of bedrock.

Scale: 30 Miles

Approximate vertical exaggeration X 100

Sources: Kanivetsky, Roman, 1978, Hydrogeologic Map of Minnesota, Bedrock Hydrogeology, Minnesota Geological Survey, State Map Series S-2, Sheet 2.
Mossler, John H., 1983, Paleozoic Lithostratigraphy of Southeastern Minnesota, Minnesota Geological Survey, Miscelleneous Map Series Map M-51.
Runkel, A.C. et al., 2001, Hydrogeology of the Paleozoic Bedrock in Southeastern Minnesota, Minnesota Geological Survey (in progress).

Minnesota DNR Waters
Helping people ensure the future of our water resources

Jim Berg November 2001