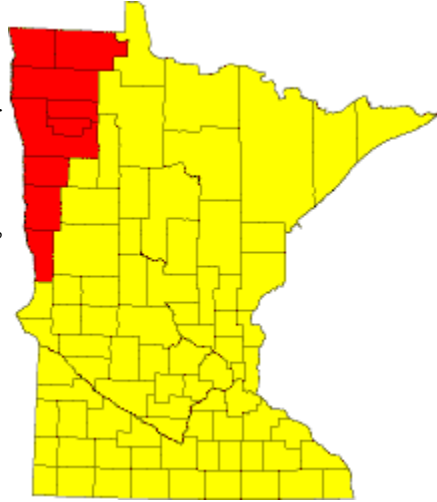




Ground Water Profile: **Red River Valley Region**

This is a ground-water profile for Minnesota's Red River Valley Region, which is comprised of Clay, Kittson, Marshall, Norman, Pennington, Polk, Red Lake, Roseau and Wilkin Counties.



HYDROGEOLOGY:

- The area has a flat topography with clay-rich, poorly drained soils.
- Beach ridges are local recharge areas susceptible to contamination.
- Natural ground-water quality in deeper aquifers is frequently poor (high-dissolved solids).

QUANTITY ISSUES:

- Meager water supplies limit economic expansion in some cities in the Red River Valley.
- There is potential conflict over the water supply due to North Dakota pumping in certain areas.

QUALITY ISSUES:

- Heavy pumping of overlying drift aquifer may cause the upward flow of lesser quality ground water from the Cretaceous aquifer in some areas.
- Water-quality parameters of special concern in this area include: manganese, arsenic, chloride, sulfate, nitrate, and total dissolved solids.

INFORMATION NEEDED:

- Water-availability and water-quality studies are needed to guide possible economic expansion.
- The need for rural water supply systems and the role that they play needs to be better understood.
- Mapping of buried aquifers to delineate potential water

supplies should be expanded.

- Areas where flowing artesian conditions complicate proper well construction should be mapped and described.
- A better understanding of natural ground-water chemistry, including impacts of upwelling deeper ground water, should be obtained.

DESIRED ACTIONS:

- Look for new ground water supplies near growth areas.
- Improve characterization of the water chemistry for current ground-water sources.
- Keep track of proposed artificial recharge proposals made in local water plans.
- Monitor beach ridges for long-term impacts from land use.
- Summarize the water quality information from a large list of parameters already available from existing studies such as the Red River National Water Quality Assessment (NAWQA).