

## Monitored Resource: Seminary Fen Deep Monitoring Wells

**Purpose:** The purpose of this monitoring program was to establish whether the water aquifer upgradient of the Seminary Fen was experiencing changes in water elevation that could ultimately indicate possible trends that would, ultimately, impact the health of the fen. The monitoring is intended to be long-term and take several years to define trends within the aquifer.

### Monitoring Description:

Two nests of monitoring wells were installed to the north of Seminary Fen in December 2005. Each nest contains two well, one screened at the water table elevation and the other screened deeper within the water table aquifer. Hydraulic head variations within wells of the nest were designed to determine whether vertical gradients could be observed within the aquifer.

The well nest containing wells MW-7WT and MW-7B is located to the north and west of the fen area. The well nest containing wells MW-9WT and MW-9B is located to the north and east of the fen area. The Watershed District purchased four automated data loggers for these wells, which were installed in July 2006. Continuous measurement of water levels in the wells has taken place ever since.

Data presented here is shown from July 2006 to July 2007. In October 2006, collection of data in these monitoring wells was taken over by Carver County. Plans are being discussed with DNR staff to survey in elevations of wells in order to tie in water level data with elevations of water within the fen.

### Monitoring Results Summary:

- Water level data from July 2006 to July 2007 shows a full year cycle of water level fluctuations, with noticeable increases of water levels at each well in early March due to snowmelt. Additionally, an increase of water levels was noted at the MW-7 on December 31, 2006 following a significant rainfall event.
- Overall, water levels in all four wells are lower than noted at the beginning of the monitoring period. Decreases ranged from 0.27 feet

at MW-7WT to 1.38 feet at MW-9WT. Decreases may be the result of short term climate change, however, and may not be indicative of a long term lowering of the water table from human-caused conditions.

- Data collection efforts should continue a minimum of 3-4 years before initial conclusions on aquifer trends can be made.

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