The Montana Bureau of Mines and Geology (MBMG) Groundwater Investigations Program (GWIP) is conducting a groundwater study of the Boulder River Valley. The purpose of GWIP is to investigate specific local groundwater issues. More information on GWIP is available at [http://www.mbm.mtech.edu/gwip/gwip.asp](http://www.mbm.mtech.edu/gwip/gwip.asp).

New neighborhoods are replacing agricultural land around the growing communities of Belgrade and Manhattan. Private wells, public water supplies, on-site septic systems and community wastewater systems are constructed on lands that were previously range or irrigated farming. Elevated nitrate concentrations have been identified in groundwater between Belgrade and the West Gallatin River.

To assist in the appropriate management of water resources in this area it is important to identify details concerning groundwater flow directions (including both horizontal and vertical gradients) and the hydrologic relationship between the aquifer and the river. As water demand and groundwater dependence increases in both communities, the effects of the imposed changes will be investigated to determine the results of future development.

In order to provide more accurate descriptions of the geology, hydrologic properties of the aquifers, available water supplies and the effects of stresses on the groundwater and surface water in the Manhattan-Belgrade study area, GWIP has been installing stream gauging stations and measuring stream flows at over 35 locations along the West Gallatin and major tributaries. We have added over 30 new and existing monitoring wells to the groundwater network, increasing the total to over 60. Monitoring wells have been placed in multiple locations throughout the study area. These test sites will be used to conduct long-term aquifer tests to generate detailed data for use in computer models of the study area. A numerical groundwater model will be constructed to simulate the observed hydrogeologic conditions and to evaluate the response of the groundwater system to specific stresses, such as new wells or municipal systems. We have, and will continue to collaborate with local agencies and water users. The final products will include a publically available interpretive report and a 3D groundwater model.

We continue to seek cooperation from landowners in this area. If you're interested in participating or would like more information please contact:

Tom Michalek  
Team Leader/Hydrogeologist  
(406)496-4405  
tmichalek@mtech.edu

Mary Sutherland  
Hydrogeologist/Modeler  
(406)496-4410  
msutherland@mtech.edu