

**American Water Resources Association**  
**2009 SUMMER SPECIALTY CONFERENCE**  
***Adaptive Management of Water Resources II***  
**June 29 – July 1, 2009**  
Snowbird, UT

**Wednesday, July 1**

**1:30 PM – 3:00 PM**

**SESSION 39: Groundwater Monitoring Strategies Supporting Adaptive Management**

**1. Towards Pilot-Testing of the National Groundwater Monitoring Network - Robert Schreiber,**  
CDM - Camp Dresser & McKee Inc., Cambridge, MA

Adaptive management of water resources relies heavily on the availability of sufficient data for developing accurate estimates of reserves, base flows, and related factors. Assessments of nationwide data collection networks have indicated that there are significant gaps. When focused on the groundwater component of our nation's water resource systems, such assessments have led to the identification of groundwater-specific needs in this regard. One effort towards addressing this situation is now entering a pilot-testing phase. This paper includes a description of that effort, with emphasis on the collection of data with sufficient density and frequency for providing adequate data for adaptive management of groundwater resources. The federal Advisory Committee on Water Information (ACWI) is directed by the Office of Management and Budget with fostering collaboration related to water information collection and sharing. The Subcommittee on Ground Water (SOGW) is a subgroup of ACWI that is developing and encouraging implementation of a long-term, nationwide ground-water quantity and quality monitoring framework. The overall goal is for the national-scale network to provide the data necessary for the planning, management, and development of ground-water supplies to meet current and future water needs, including ecosystem requirements. Recently, the SOGW submitted a report with the framework included, along with recommendations for implementation. The ACWI has approved the SOGW's report and its request for moving from the "concept" stage into the "piloting" phase of the National Groundwater Monitoring Network. The SOGW therefore formed an Implementation Work Group, charged with developing detailed plans for the pilot-testing. This work group has produced a piloting schedule, consisting of a 1-year testing period, preceded by a 3-month period for selection of pilot areas and followed by a 3-month period for assessment of results. The pilot-testing areas will be selected through a process involving requests-for-proposals, and submittal of proposals by consortia of state agencies, Federal agency partners, and participating academic and private sector organizations. Venues such as this conference provide the opportunity to inform the water resources profession and to generate interest and participation.

**2. Statewide Monitoring: Fitting into a National Ground-Water Monitoring Network - Thomas Patton,**  
Montana Bureau of Mines and Geology, Butte, MT

Long-term ground-water monitoring programs are essential to provide background data sets useful to validate and assess outcomes of water-resource adaptive management plans. For example, how might lining of distribution canals and adopting more efficient irrigation practices change the timing and variability of ground-water storage? Increased irrigation efficiency may decrease the amount of incidental recharge available to aquifers causing unintended impacts to late-season stream discharge and overall ground-water storage. One of Montana's management tools is a 900-well statewide monitoring network, which is part of the Ground-Water Assessment Program at the Montana Bureau of Mines and Geology (MBMG). The network is designed to generate long-term data to monitor change in the quantity and quality of Montana's ground water. Network data are stored in Montana's Ground-Water Information Center (GWIC) database and are available through the GWIC website at <http://mbmaggwic.mtech.edu>. Statewide monitoring programs like Montana's provide long-term data that when combined with ancillary data sets such as precipitation, ground-water development rates, and land use change help develop adaptive management plans and gage their effectiveness. At the national scale, similar data will be developed by the National Ground-Water Monitoring Network (NGWMN) proposed by the Advisory Committee on Water Information (ACWI) and its subgroup the Subcommittee on Ground Water (SOGW). A challenge for the nation is to successfully integrate information generated by state, tribal, and other

monitoring networks into a consistent dataset useful to guide national-scale policy. Federal and non-federal partners in the NGWMN must ultimately share the costs of providing NGWMN data. Thus the ACWI/SOGW framework document, A National Framework for Ground-Water Monitoring in the United States includes a portfolio of funding/data gathering models tailoring potential funding options to the interests, capabilities, and long-term monitoring missions of potential NGWMN cooperators.

**3. Piloting for a National Ground Water Monitoring Network - Timothy K Parker**, Schlumberger Water & Carbon Services, Sacramento, CA (co-authors: Robert P. Schrieber, William L. Cunningham, Christine Reimer)

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