New Jersey's Ambient Ground Water Quality Monitoring Network: Status of shallow ground-water

By Michael E. Serkes and Raymond Brausendy, NJDEP/AGMN

The New Jersey Ambient Ground Water Quality Monitoring Network (AGWQMN) yields information about the quality of shallow ground water in New Jersey. It monitors parameters such as pH, SC, DO, T and alkalinity; major ions, trace elements, gross-alpha particle activity, volatile organic hydrocarbons (VOC) and pesticides.

The AGWQMN includes 150 wells distributed across the state, with a focus on agricultural and urban areas. Samples are collected on a regular schedule, allowing for the monitoring of seasonal and spatial trends.

The quality of shallow ground water is important because it recharges deeper aquifers used for potable water supplies. The AGWQMN provides valuable data on water-quality constituents and parameters, including nutrients, pesticides, VOCs, and trace elements.

The network's findings reveal that the highest median nitrate concentrations are found in agricultural and urban areas, indicating potential contamination from fertilizers and other sources. Conversely, undeveloped areas show lower nitrate levels, suggesting a lower risk of contamination.

In addition to nitrate, pesticides are a notable concern. The network's data show a higher frequency of detections in agricultural areas compared to urban and undeveloped areas. This highlights the importance of monitoring these areas for potential contamination.

The AGWQMN's success is owed to the efforts of many individuals, including John Curran and Greg Steidal from NJDEP/NJGS who helped in siting, installing, and maintaining wells. The network's continued interest and dedication have helped maintain its high quality.

The data collection methods and sampling strategies have been refined over time, ensuring the network remains a valuable tool for assessing water quality in New Jersey. With ongoing support and resources, the AGWQMN continues to play a crucial role in protecting the state's water resources.