

USGS National Groundwater Monitoring Network

Final Technical Report

Mississippi

- Award Number: G16AC00366
- Agency Name: Mississippi Department of Environmental Quality
- Title: Mississippi Department of Environmental Quality's Observation Well Network: A static network of observation wells in the state of Mississippi for tracking changes in groundwater levels over time
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Work done to support the NGWMN as a data provider

The Office of Land and Water Resources (OLWR), a division of the Mississippi Department of Environmental Quality (MDEQ), applied for funding to become a data provider to the National Groundwater Monitoring Network (NGWMN) in 2015. The OLWR submitted a Scope of Work to the United States Geological Survey (USGS) outlining steps the OLWR would take to integrate its current monitoring well network into the NGWMN database. In the Scope of Work document, the OLWR divided this process into seven tasks with a detailed description of how each task would be executed.

The seven tasks that were outlined in the Scope of work were: evaluation of monitoring sites; classification of selected sites; population of the Well Registry; establish Web Services; mapping of fields to the data portal; documentation of data collection; and production of a summary document. At the close of the award period, the OLWR had completed all tasks, except for establishing functioning web services. This issue was resolved in May of 2017. The OLWR has since been providing ongoing input of groundwater levels and maintaining the database connection that links MDEQ's database to the NGWMN database portal.

Updates made to web services during award period

During the FY2016 award period staff made periodic updates to web services. Four types of metadata were updated. The first update was to locational data. Coordinates were checked in the field and refined within web services to be correct within 15 feet of the location. Missing information about casing materials that could be observed in the field was noted while performing routine fieldwork. New water levels collected were entered into the web services database and uploaded. Staff also began collecting timestamp data for water level measurements. This data was entered into the water level web service. Two wells (049P0072 and 049T0014) were removed from both web services and the NGWMN data portal. These wells have been destroyed and are no longer available for water level measurements.

During the award period, staff followed quality assurance procedures for saving data outside of the NGWMN database as outlined in the Data Management Plan submitted as "Appendix B" within the Final Technical Report for Award Number G16AC00019. These procedures include saving data into multiple databases. These databases are stored internally and backed up to a separate secure location.

Problems encountered in serving data to the web portal

Work began in July of 2016 to bring OLWR's web services online. There were some issues encountered under the FY2015 award period that were addressed during the FY2016 award period, including issues with data formatting. In January 2017 web services elements such as timestamps and accuracy units were corrected to match ISO 8601 requirements. USGS staff then tested the OLWR web services connection and encountered problems with conversion of the water level data table through ArcGIS into XML format. These issues were resolved in March 2017 by making changes in the original data table. Work to complete the final mapping of web services with successful data transfer was finished in May 2017.

Planned changes in databases or web services that would impact web services

The OLWR has no immediate changes planned for the web services databases. The OLWR has applied for funding through Funding Opportunity G17AS00070 to expand web services to include detailed lithology and construction data obtained from paper records. This proposed work would not begin until FY 2018, if funded, and would be completed over an 18 month period. A new database is currently under development for the OLWR, but there are no plans currently to incorporate the Observation Well Network into this database.