

Award Number: G21AC10420

Agency Name: Mississippi Department of Environmental Quality, Office of Land and Water Resources

Title: USGS NGWMN: Proposal for the Office of Land and Water Resources, a division of MSDEQ FY2021

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## Overview

The Office of Land and Water Resources (OLWR), a division of the Mississippi Department of Environmental Quality (MDEQ) was awarded funding under Objective 2 (Award Number G21AC10420) as an existing data provider of the National Groundwater Monitoring Network (NGWMN). This document is being submitted to explain in detail the processes and techniques used to complete the objective.

## Description of Work Performed Under Objective 2

During this award period, OLWR staff continued to maintain connections to the database and update metadata as needed. Due to limitations of the database currently housing water level, lithology, and construction data, all data provided to the NGWMN is stored in separate Excel Workbook files outside of the OLWR's main database. Updates and changes to data are entered manually into this external Workbook quarterly. Once data has been checked for accuracy, data entered into these external data tables is uploaded and converted to the appropriate format using a tool in ArcGIS. This information is then served out externally via a dedicated server. A week after the data is published as a web service, staff check values entered for successful data transfer into web services. In addition to routine maintenance, OLWR staff continued entering data obtained during field observations into web services data tables. Information added under this objective includes updated measuring points and updated location information when applicable. Observations and measurements taken during this period were managed according to the requirements set forth in the data management plan submitted with the original funding request (Appendix A). In total, sixteen new wells were added to the network (Appendix B)

## Appendix A

### **Data Management Plan**

Type of Data: The OLWR is collecting water level data to assess hydrogeologic conditions of Aquifers on the Principal Aquifer scale. Water levels are collected yearly at 179 wells.

Data and Metadata Standards: Data will be collected according to common field practices and standards set by the USGS for collecting water level data. Data will be collected using either a steel tape or electronic tape (e-tape). Measurements with a steel tape will match within .02 ft, and measurements with an e-tape will be tested three times before being recorded. These instruments will be calibrated yearly. All data collected is manually entered into a separate Excel spreadsheet and then converted into an ArcMap layer file. The ArcMap file (.mxd) will be translated to an .xml format by ArcMap. These separate web services will be titled “Lithology”, “Water Level”, and “Well Construction”. The final data format conforms to the metadata standard ISO 19115 series. All data entered will be reviewed for accuracy by a second party before final submission.

Policies for Access and Sharing: All Personally Identifiable Information (PII) has been removed from the data that will be collected as part of this project. The data will be made available through the NGWMN Data Portal without restriction.

Provisions for re-use, re-distribution: Any data obtained through the data portal may be redistributed if the source of the data is properly cited.

Plans for Archiving and Preservation of Access: All original data collected as part of this project is stored in multiple databases. The original data will be stored on a Windows computer that is backed up weekly. The original data will also be stored on an internal server that is backed up to physical tapes which are stored offsite. The final dataset submitted to USGS will be saved on an external server with connection to the NGWMN database. This server will also be backed up weekly.

Appendix B

<b>New wells added to the NGWMN</b>		
<b>Site Number</b>	<b>Principal Aquifer</b>	<b>Well Depth (ft.)</b>
015G0057	Mississippi River Valley alluvial aquifer	45
053E0136	Mississippi River Valley alluvial aquifer	100
053K0001	Mississippi River Valley alluvial aquifer	111
055B0044	Mississippi River Valley alluvial aquifer	27
083M0047	Mississippi River Valley alluvial aquifer	55
083O0037	Mississippi River Valley alluvial aquifer	48
083P0055	Mississippi River Valley alluvial aquifer	57
125A0073	Mississippi River Valley alluvial aquifer	60
133M0038	Mississippi River Valley alluvial aquifer	110
149E0016	Mississippi River Valley alluvial aquifer	64
149J0037	Mississippi River Valley alluvial aquifer	53
151D0176	Mississippi River Valley alluvial aquifer	70
151S0004	Mississippi River Valley alluvial aquifer	105
163F0033	Mississippi River Valley alluvial aquifer	45
163J0013	Mississippi River Valley alluvial aquifer	74
163P0018	Mississippi River Valley alluvial aquifer	53