PROGRESS REPORT
FOR PERIOD ENDING SEPTEMBER 19, 2019

PROJECT: Development and maintenance of a computer model to simulate groundwater flow and saltwater encroachment in the Baton Rouge Sands, Louisiana

COOPERATING AGENCIES: Capital Area Ground Water Conservation Commission, Louisiana Department of Transportation and Development, City of Baton Rouge and Parish of East Baton Rouge

PROJECT CHIEFS: Max Lindaman and Chuck Heywood

PERIOD OF PROJECT: Oct. 2012 to Sept. 2022

PROBLEM: Large water withdrawals from aquifers in East Baton Rouge Parish have resulted in northward encroachment of saltwater across the Baton Rouge fault toward the public and industrial supply wells. Groundwater flow and solute transport models are needed for the Baton Rouge sands to simulate the effects of past, current, and a variety of possible future pumping scenarios and provide a tool to evaluate possible management alternatives.

OBJECTIVE: To develop a computer model that can be used as a tool to simulate past, current, and possible future conditions in Baton Rouge area sands.

PROGRESS AND SIGNIFICANT FINDINGS:

1. The SEAWAT model archive, "Chloride Transport in the "1,500-Foot", "2,400-Foot", and "2,800-Foot" Sands of the Baton Rouge Area, Louisiana," was approved for dissemination. The model archive will be released to the public on the USGS Water Resources NSDI Node at https://water.usgs.gov/lookup/getgislist.
2. The report, "Simulation of Groundwater Flow and Chloride Transport in the "1,500-Foot" Sand, "2,400-Foot" Sand, and "2,800-Foot" Sand of the Baton Rouge Area, Louisiana," has been approved for publication and currently is being formatted for printing.
3. Work continued on revisions to the model to simulate conditions in the "400-ft," "600-ft," "800-ft," and "1,000-ft" sands. Simulated chloride concentrations in the "600-ft" and "1,000-ft" sands were calibrated to historic chloride measurements.
4. The effects of continued withdrawals at 2016 rates (the "status quo" scenario) on water levels and chloride distributions in the "400-ft," "600-ft," "800-ft," and "1,000-ft" sands over 40- and 100-year periods also were simulated.

PLANS FOR NEXT QUARTER:

1. Documentation of the model to simulate flow and transport in the "400-ft," "600-ft," "800-ft," and "1,000-ft" sands will continue.
2. Discuss and identify concerns in the "400-ft," "600-ft," "800-ft," and "1,000-ft" sands. Consider water-management alternatives amenable to groundwater model analysis and formulate hypothetical scenarios to evaluate the possible management alternatives.

PROBLEMS/CONCERNS:

None.