

**ANALYSIS AND COMPARISON OF THE BEHAVIOR OF WATER LEVELS IN 03 AQUIFER SYSTEMS  
IN THE BRAZILIAN SEMI-ARID, IN THE PERIOD FROM 2011 TO 2023**

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**ABSTRACT**

Brazil is a country of continental dimensions and, therefore, presents different physiographic scenarios, in addition to different patterns of human occupation. Since 2010, the Geological Survey of Brazil has been responsible for integrated groundwater monitoring network - RIMAS (the bigger groundwater network of regional representativity within South America) in the main regional intergranular aquifers in Brazil. The historical series available, despite being considered relatively short, made it possible to record important regional trends resulting from periods of drought, floods and/or changes in patterns of groundwater exploitation. The present work analyzes and compares the behavior of groundwater surface resulting from the monitoring of 03 distinct and representative aquifer systems of the Brazilian semi-arid region, namely: Missão Velha – Rio da Batateira, Açú and Cabeças. In general terms, the water table data from the Missão Velha – Rio da Batateira, Açú and Cabeças aquifer systems, located in the northeast region of Brazil, the region with the greatest water scarcity in the country, demonstrate that despite some seasonal component in the series, groundwater levels have been lowered throughout the monitored period, and this occurs possibly due to low recharge and increased exploitation of groundwater in the Brazilian semi-arid region.

**Key words:** RIMAS; Water Levels; Drawdown; Brazilian Semi-arid Region; Missão Velha - Rio da Batateira Aquifer System; Açú Aquifer System; Cabeças Aquifer System;