Advances and Impacts of The Brazilian Hydrogeological Cartography Program

E. M. Senhorinho; T. L. F. De Paula; M. A. Freitas.

The Brazilian Hydrogeological Cartography Program was established in 2014 by the Geological Survey of Brazil (SGB). Every published map is unrestricted available alongside its GIS in the SGB's website (www.sgb.gov.br). Among the main achievements of this program are the development of a comprehensive hydrogeological mapping methodology and the sideward collaboration to national and international groundwater projects. The developed methodology to elaborate maps is a 6-classes hydro-stratigraphic productivity system, a water output capability approach build upon flow type and average mathematical hydrodynamic parameters as flow rate, specific capacity, transmissivity, hydraulic conductivity and storage capacity. This classification system encompasses from extraordinarily productive aquifers to non-aquifers, allowing high-confidence comparison between different regions and scales. The hydrogeology maps are essentially made upon reviewed and assessed geological maps in face of charted water wells information from the larger registered wells databases available, like the own SGB's SIAGAS DB, the larger in South America. International distinguished products include the hydrogeological charts of Del Plata River Basin, comprising areas from 5 countries (Argentina, Bolivia, Brazil, Paraguay and Uruguay), and the Quarai River Basin (Brazil-Uruguay border), both published in 2015. The Program published dozens of maps since the opening 1:1,000,000 Brazilian Hydrogeology Atlas and Map, that covers every aquifer of the whole Brazilian territory. After this, the Program have been mapping a series of minor areas, showing more detailed aquifer features, as metropolitan regions, States, and research interest zones. The main impact of this program is the data availability for academic, professional and governmental uses, welcomed and warmly adopted, as intended to improve groundwater politics and legislation, mainly grant and concession politics.

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