

Hydrogeology, Hydrolithology, Annual Exploited Volumes and Soils of the Joinville, Brazil

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Joinville is a municipality located in South region of Brazil, in the northern region of the State of Santa Catarina, it is the largest city in the state, ahead of the capital Florianópolis, and is the third most populous city in the southern region of Brazil, behind Porto Alegre and Curitiba. The territorial area is 1,127,946 km², estimated population 597,658 people in 2019 results in demographic density of 457.58 inhabit / km². The objective of this work is to present and discuss the maps of hydrogeology, hydrolithology, explored annual volume and the soils of the municipality of Joinville, in State of Santa Catarina. The altimetry variation of the Joinville is 1,323m, ranging from 0m in Babitonga to 1,323m on North (Pirabeiraba). The hydrogeological map is represented by a set of hydro-stratigraphic units, obtained from each existing aquifer, explaining their spatial variations in productivity and generating hydrogeological polygons. According to information from the Hydrogeological Map of Brazil to the Millionth, published by the Geological Survey of Brazil, hydro-stratigraphic units represent geological formations or parts of them, which store and transmit groundwater in a similar way and with productivity of the same order of magnitude, that is, considering aquifers in places where they do not suffer variations in their productivity. The hydrolithology of the basin was separated by the grouping of geological units that store and transmit groundwater in a similar way, being the porous or granular, karst and fractured units. The hydrolytic map of the Joinville shows the granular unit (Gr) with generally low and moderate productivity and fractured units (Fr) with low or low productivity or generally very low productivity. In general, in the territory of the municipality of Joinville, the exploited volumes are below 1 million cubic meters per year. The hypsometry of this study used images made available by the American Geological Survey (USGS) in 2014, the SRTM 30 meters. The hydrogeology, hydrolithology and explored annual volume maps that used the data provided in the Hydrogeological Map of Brazil, all published by the Geological Survey of Brazil. The map with the location of the municipality of Joinville, in the state of Santa Catarina, can be downloaded from: https://drive.google.com/file/d/1oPMQxkdcCfUDonwD077XdYfd7w_DQ-I/view?usp=sharing. The hypsometric map of Joinville can be downloaded from: <https://drive.google.com/file/d/162zZiVtOgUybTG-U7UO1BCAjuqkmuB1/view?usp=sharing>. The hydrogeological map of the basin can be downloaded from: https://drive.google.com/file/d/1ZEAW_Y41jLUMStTIIETACrsluLONhXrC/view?usp=sharing. The hydrolytic map of the basin can be downloaded from: https://drive.google.com/file/d/1_A8tv1sXbFDs1-9zfSSz9zafP-nbQwid/view?usp=sharing. The explored annual volume map can be downloaded from: https://drive.google.com/file/d/1NBp3HfQF9vMad21wbOGPgZ_dfbjm5t23/view?usp=sharing. The soil map in the basin can be obtained in: <https://drive.google.com/file/d/1wYBTpfaBOQxTRVdPvi8o2hRGSq1EdLo9/view?usp=sharing>.