

## **The Parecis aquifer in the town of Vilhena, Rondônia State, Amazon, Brazil: preliminary evaluation**

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The Parecis Formation, the main aquifer of Rondônia, crops out in the southeast portion of the state. The formation consists of sandy and conglomeratic Cretaceous sediments with minimum thickness of 200m. The sandstones have bimodal granulometry and large scale cross bedding that characterise a desertic system. Similar systems also occur in the Jurassic Botucatu and Permian Fazenda da Casa Branca formations that underly the Parecis Formation. The Parecis aquifer may also encompass these formations.

Groundwater from this aquifer is exploited in the urban and peripheral areas of the town of Vilhena in southeast Rondônia. The data from ten wells in this region were used to preliminarily characterize the Parecis aquifer. The wells have a maximum depth of 144m, their specific capacity ranges from 4.6 and 15.4 m<sup>3</sup>/h/m, with an average of 10m<sup>3</sup>/h/m, and the production may reach over 250 m<sup>3</sup>/h. Two wells were selected for transmissivity evaluation, after pumping test data. The values found were  $1.9 \times 10^{-3}$  m<sup>2</sup>/s and  $2.7 \times 10^{-3}$  m<sup>2</sup>/s for transmissivity, and  $2.7 \times 10^{-5}$  m/s and  $3.2 \times 10^{-5}$  m/s for permeability, respectively for each well.

The present data point to the high potential of the Parecis aquifer; however, the knowledge of the volume and total capacity of the aquifer is mandatory in order to rationalize the use of its groundwater for the social-economic development of the region.