

## **Aquifer behaviour in acid volcanic rocks of the Paraná Basin in western Santa Catarina State, Brazil**

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The acid rocks of the western part of the Santa Catarina State are subdivided into porphyritic units of the Chapecó type and aphanitic rocks of the Palmas, Campo Erê and Machadinho types. These rock units are of large aerial extent and thicknesses that may attain 150m, with flows up to 50m thick. They form extensive undulating plateaux and constitute the highest parts of the region (over 900m) with slightly closed drainage systems. These units form heterogeneous and anisotropic aquifers, with water circulation and storage restricted to discontinuities. Data from water-bores penetrating these rocks show that these aquifers usually run to depths of about 90m. The last water influx occurs most frequently between 20 and 50m. Pump tests give yields from 0 to 55.0 m<sup>3</sup>/h, with average yields of 8.5m<sup>3</sup>/h. The specific capacity of the wells is situated between 0 and 3.45m<sup>3</sup>/h/m, with an average of 0.66m<sup>3</sup>/h/m. Well water pH ranges from 5.36 to 7.88, with an average of 7.29. The total dissolved solids (TDS) vary from 14.3 to 191.1mg/l, with an average of 85.80mg/l. The most favourable hydrological conditions are related to zones with vesicle and amygdale, auto-brecciated zones and horizontal joints when cut by fractures.