

The development of groundwater in metamorphic rocks aquifer at Ban Mue Ba, Pasemat Subdistrict, Sungai Kolok District, Narathiwat Province

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Ban Mue Ba, located in Village No. 4, Pasemat Subdistrict, Sungai Kolok District, Narathiwat Province, faces high iron concentration groundwater problems and a shortage of water for consumption. The topography of this area is a plain with an elevation of approximately 8-12 m above mean sea level. Its western side is bounded by north-south trending mountains. In addition, the area contains a granite aquifer with low groundwater potential. This study aimed to survey and assess the potential of groundwater in Ban Mue Ba to develop groundwater resources in the future. The development of groundwater in Ban Mue Ba is one of the project areas under the budget in the fiscal year 2022 by the Bureau of Groundwater Resource Regional 12 (Songkhla), Department of Groundwater Resources. The methodology consisted of a geological survey, a geophysical resistivity method using the vertical electrical sounding (VES) for 19 survey points, and drilling. The results from the geological survey found schist, which is a metamorphic rock, in Ban Mue Ba area. Consequently, the VES was used to find water retention in schist fractures. It was found that there was nonfracture in schist at the south side which was therefore not suitable for drilling and developing wells. The interesting survey points were in the central to the north side of the area. Fractures in schist at depths of 45-50 m and 105-125 m were found at survey point number 3. When drilling a well according to the VES survey results, it was found that there was the schist at a depth of 10-208 m, and the total volume of groundwater from the well was 5 m³/hr. From the study, the development of groundwater resources in metamorphic rocks aquifer at Ban Mue Ba is possible and able to build water systems to decrease the shortage of water in the future.

Keywords: Metamorphic rocks aquifer, Granite aquifer, Groundwater development

