Project to investigate and assess the potential for groundwater in pyroclastic rocks in order to solve the drought problem in the area Phatthana Nikhom Subdistrict, Phatthana Nikhom District, Lopburi.

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The study area is in the Pa Sak River Basin, covering approximately 114 km^2 in Phatthana Nikhom subdistrict, Phatthana Nikhom district, Lopburi province, Central Thailand. The increasing population in this area causes people to have more water needs for their everyday activities. This significantly leads to people lacking water for their consumption, especially insufficient raw water for producing water supply. The government is concerned about people who live in water-stressed area. So that the village's water supply system has a sufficient and reliable source of affordable water in terms of consumption and as an additional water source for agriculture. The Bureau of Groundwater Resources 3 (Saraburi), therefore, carried out a survey of the region in the area of responsibility Phatthana Nikhom District Lopburi, which has a population of 4,210 households with a population of 10,667 is suffering from a water scarcity that is insufficient to meet the needs of the people in the area. This paper aims to characterize the hydrogeological conditions, groundwater flow systems and groundwater potential through detailed field investigations. The study area is covered by pyroclastic rocks which brownish to gray tuff that highly weathered, and Rhyolite, it is brown to gray in colors with grains so small that they are difficult to observe without a hand lens, it is mostly composed of quartz. These extrusive igneous rocks are Triassic in age. Forty vertical depth sounding resistivity data are available for an analysis of physical properties of fractures and weathered rock to drilled six boreholes in the study area. The shallow aquifer is located at 30-36 m and deep aquifers are located at 55-60 m, 150-155 m, 170-185 m depth. They yield water around 20-40 m^3/hr. Water level of sixty monitoring wells were analyzed to groundwater flow systems. Regional groundwater mainly flowing from the northwest to the southeast. The recharge areas are located in relatively higher topography, especially in the north portion of the area (Khao Prayadernthong). Chemical of water samples in the field survey, groundwater range in TDS from 280-1,171 mg/L (average 521 mg/L). According to the aforementioned study, the study area had a high potential for groundwater and will be developed as groundwater development projects for large-scale area consumption. As a result, a detailed study of groundwater systems is essential to ensure that the quality of groundwater is suitable for safe consumption.

Key words: pyroclastic rock, water supply, groundwater flow