SAN KAMPHAENG GEOTHERMAL FIELD

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Abstract

San Kamphaeng geothermal field is one of the most promising and extensively studied areas in Thailand. Geological studies at scale 1 : 10,000 indicate that the area is composed of the oldest Mae Tha Formation of Carboniferous, Kiu Lom Formation of Middle Permian, granites and andesites of triassic and alluvial deposits. The area is a horst-and-graben type bordered by normal faults, the Huai Pong fault and the Huai Mae Koen fault, trending in the NNW-SSE direction.

Chemical alteration zones of outcrops indicate that hydrothermal solution causing the alteration is possibly an intermediate-to-acidic liquid of less than 200° C temperature. Chemical geothermometer calculations using the SiO_2 and the Na-K-Ca method yield reservoir temperatures of about 160° C and 192° to 207° C respectively, as confirmed by 30 m. depth temperature survey that reached a geothermal fluid portion of 139°C. Seismic studies indicate that the faults along the hot spring area and adjacent are still active and the geothermal fluids circulate and upflow along these conduits to the surface. In conclusion, the potential geothermal area in the San Kamphaeng Geothermal system is confined to Ban Pong Nok District, where actual manifestations are found on the surface and N-S and NW-SE trending faults are perceived.