

**A SURFACE-BASED STUDY ON ANDRASSY GEOTHERMAL PROSPECT FOR
POWER GENERATION**

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ABSTRACT

This surface-based geothermal study was conducted in the Andrassy geothermal prospect in Tawau and it consists of three parts. Firstly, the current state of geothermal activity was assessed through reconnaissance and geochemical study. Secondly, the ground surface thermal profile of the most probable resource area was investigated via field measurements and satellite data analysis. Thirdly, the ambient environment of the most probable resource area was surveyed and its data were then applied to simple calculation models to foresee the potential environmental impacts in the absence of a binary geothermal power plant. Five new geothermal manifestations were discovered and another ten active manifestations were re-documented during this study. These manifestations were 43.3 – 78.2 °C in temperature and 6.01 – 7.12 in pH. They appeared to be NW aligned, suggesting structural control. The geothermometry results gave calculated reservoir temperature in the range of 180 – 238 °C that warrant geothermal power generation. However, no ground surface thermal anomaly was detected in the most probable resource area and its vicinity; the ground surface temperature ranged from 26.6 – 33.0 °C. No significant on-going-operational environmental impact was foreseen. Based on the reconnaissance and geochemical study results, the current geothermal activity is concluded to be more active than it was in 1989 when it was assessed by Lim *et. al.* (1991). Nonetheless, there is insufficient evidence to conclude that the resource is in the most probable resource area as claimed by PLN (1993), further geophysical study is required. The minor on-going-operational environmental impacts foreseen, however, do encourage the development of geothermal binary power plant in the Andrassy prospect. In addition, this study has foreseen some other options of geothermal development.