

Geophysical model of the "Cinnamon" geothermal prospect revealed by magnetotelluric and gravity studies

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Abstrak

The Cinnamon Geothermal prospect is located in the northeastern of Mayonnaise Island, Indonesia. It is located in quaternary volcanic terrain about 750 m asl. The various types of surface manifestations e.g. solfatara, fumarole, steaming ground, mud pools and hot springs are concentrated near Cinnamon village. Few reconnaissance surveys had been conducted since year 1977. To model the Geothermal Prospect of Cinnamon, one can use Magnetotelluric and Gravity method.

Magnetotelluric method uses telluric current as natural source to identify the resistivity properties of subsurface rocks. This resistivity section can be used to identify the occurrence of clay cap. Gravity method can be used to map the density response from the subsurface to detect a massive density contrast that match the geological condition.

The integrated model of Cinnamon combining geophysical, geochemical and geological data can be used to locate the reservoir, outflow, and upflow for further drilling purpose and exploitation.