

Gravity Anomalies and Regional Geological Studies Between Slamet Volcano, Buaran and Bantarkawung Areas for Geothermal Energy Exploration and Development

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<b>Abstract</b>	<p>The emergence of several hot springs in the area between Slamet Volcano and Bantarkawung is interesting to study. Some questions related to natural phenomena include whether some of the hot springs come from the same or different reservoirs. These information need to be known because of the location has become centers of small-scale economic growth in the form of tourist sites and large-scale namely the development of geothermal power plants. This research uses two research methods: geophysical methods of satellite gravity anomalies and regional geological analysis methods. The gravity anomaly method aims to obtain information on areas with low gravity anomalies that are interpreted as high permeability zones. Some hot springs appear in locations that have high values of gravity anomalies which are interpreted to be composed of compact high density volcanic rocks and high secondary permeability of fractures. Regional geological analysis method aims to obtain distribution information and geological conditions of the research location. The results of regional and residual anomalies analyses of the research locations showed low values in areas where hot springs were released. Those areas are: Buaran, Pakujati-Paguyangan, Cipari, Bantarkawung and Ciangirexcept around Slamet Volcano. Those areas are interpreted as having geothermal reservoirs and geothermal water discharge to the surface. Geological conditions in the form of folding structures and the boundaries between rock units which are the pathways of fluid permeability also support the emergence of geothermal water from below the earth surface.</p>
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