

Study of Geological Structure for Potential Fresh-Groundwater Aquifer Determination around Cidaun Beach, Cianjur Regency, West Java Province, Indonesia

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Abstract : The study of the geological structure in the surrounding area of Cidaun, Cianjur Regency, West Java Province, Indonesia was conducted around the southern coast of Java Island. This study aims to determine the potentially structural trap deposits of freshwater resources in the study area, according to that the study area is an area directly adjacent to the beach, where the water around it did not seem fresh and brackish due to the exposure of sea water intrusion. This study uses the method of geomorphological analysis and geological mapping by taking the data directly in the field within 10x10 km of the research area. Geomorphological analysis was done by calculating the watershed drainage density value and roundness of watershed value ratio. The goal is to determine the permeability of the sub-soil conditions, rock constituent, and the flow of surface water. While the field geological mapping aims to take the geological structure data and then will do the reconstruction to determine the geological conditions of research area. The result, from geomorphology aspects, that the considered area of potential groundwater consisted of permeable surface material, permeable sub-soil, and low of water run-off flow. It is very good for groundwater recharge area. While the results of geological reconstruction after conducted of geological mapping is joints that present were initiated for the Cipandak Fault that cuts Cipandak River. That fault across until the Cibako Syncline fold through the Cibako River. This syncline is expected to place of influent groundwater aquifer. The tip of Cibako River then united with Cipandak River, where the Cipandak River extends through Cipandak Syncline fold axis in the southern regions close to its estuary. This syncline is expected to place of influent groundwater aquifer too.

Keywords : geological structure, groundwater, hydrogeology, influent aquifer, structural trap

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