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Summary of the Doctoral Thesis by Klaudia Korzec

Title: Hydrogeochemical characteristic of geothermal water in Bańska Niżna

Hydrogeochemical characteristic of geothermal water in Bańska Niżna was determined on the basis of archival physicochemical analysis taken on the geothermal waters exploited by Bańska PGP-1 and Bańska IG-1 wells. Archival studies have been completed with results of Author's own research which was conducted from December 2013 to September 2015 after launching of the new geothermal well Bańska PGP-3.

Author present research which include prepare of individual methods of sampling of geothermal waters in all exploited well. There is also present the constructed technical solutions which allow not only sampling but also measurement of selected parameters *in-situ*, directly on the head of the well.

In order to verify the methodology adopted and applied technical solutions, author designed and implemented quality assurance and quality control (QA/QC) programme, not previously used in Poland in the monitoring of geothermal water

The main factors affecting the physicochemical composition of the geothermal water of the Podhale Basin are primarily interactions between water and rocks. Therefore, thesis presents results of hydrogeochemical modeling, which the main aim was to evaluate the impact of lithology reservoir rocks on the chemical composition of thermal waters.

There is also present temporal and spatial evaluation of variability of the chemical composition of water from each geothermal well, also taking into account the dependence of the intensity of yield and changes caused by launch the new geothermal borehole Banska PGP-3.

Based on own research (sampling collected by one sampler using the same sampling procedure, analysis of samples in one laboratory by one analyst with the use of the same research method) it was indicated specific components and assess their stability of chemical composition, taking into account the results of geochemical composition.