

**Part 5: Long-term Groundwater Flow Analysis under Long-term Geomorphic Changes**

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A long-term groundwater flow for regional area of sedimentary rock was studied in order to develop the safety assessment code for groundwater flow. The area (40x50 km) consists of sandstone and mudstone with the monoclinical structure of their layers. The hydraulic data of the stratum was used from existing surveys and literatures. In addition, taking account of the geomorphic changes in long-term evaluation, uplift and erosion data in this area was adopted in the analysis. Analytical results show that the groundwater flow velocity after 100,000 years is increased by 5% in the 500m depth of the center of the domain because of increasing hydraulic gradient caused by the geomorphic changes.