Consideration on pressure response to shaft excavation

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At the Mizunami Underground Research Laboratory construction site in Gifu Pref., construction of two vertical shafts, each to a depth of 1000m, began in 2003. The hydraulic groundwater pressure of the bedrock is monitoring in order to understand the change in the geological environment resulting from the shaft excavation activities.

Several near-vertical faults that cross the URL site ware identified some our study. One fault (NNW fault) in particular is hydrogeologically significant groundwater flow barrier.

In 2007, we drilled a borehole at 200m depth of Shaft. This borehole is nearby the estimated NNW fault. Multi-level groundwater pressure monitoring data show significant hydraulic response resemble to the reverse water-level fluctuation for the drilling work.

In this study, we report the usability of the significant hydraulic response