

Lithostratigraphy of the Mizunami Group through the shaft excavation in the Mizunami Underground Research Laboratory

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The geological and geophysical investigations were carried out for site scale of Phase I in the Mizunami Underground Research Laboratory of Tono Geoscience Center. The geological modelling of site scale have been developed based on the geological structure and the property of fracture distribution of Mizunami Group and Toki granite in connection with the study of underground water flow and the construction of underground facilities. For block scale of Phase II, the accuracy and dependence of geological model has to be progressed to identify the detailed geological factors with the possibility to influence underground water flow. This report introduces the result of geological investigations in shafts and study of geological factor for modeling of block scale.

The detailed geological logging of drilling cores of the Mizunami Group were carried out to acquire the lithostratigraphical data for development of the geological model of PhaseII. Mizunami Group in MIU was mainly divided into Toki Lignite-bearing Formation, Hongo Formation and Akeyo Formation(Tsukiyoshi M, Togari M and Yamanouchi M). Moreover, each formation and member was subdivided into several lithostratigraphical units to distinguish the lithological feature with the possibility to influence underground water flow. As the result of the investigations in main shaft and ventilation shaft, the lithostratigraphy and geological structure were also able to be identified.

Consequently, the lithological features such as mudstone, basal conglomerate and tuff that were important for the study of underground water flow and the construction of underground facilities were identified. The geological parameters will be determined to develop the geological model of block scale on the basis of the result of this investigation.