Horonobe URL Project - Rock and Mineral Characteristics of Neogene Sedimentary Rock

Toshifumi Moriya[1], Atsushi Fujishima[1], Noboru Nakatsuka[1]

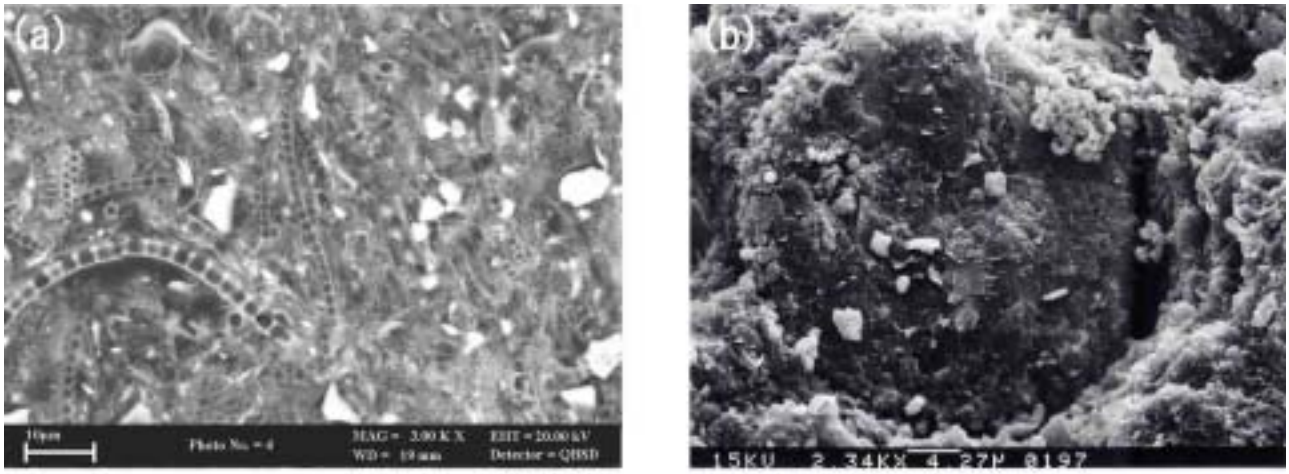
[1] Horonobe,JNC

http://www.jnc.go.jp

Japan Nuclear Cycle Development Institute (JNC) is developing an underground research laboratory (URL) project for Neogene sedimentary rock in Horonobe, Hokkaido. The project was commenced in March 2001 to conduct systematic research and development in the actual deep underground in order to better assess the deep underground environment and to build confidence in the technical feasibility of the geological disposal. During fiscal 2001, a surface-based regional geological investigation was performed in various areas in Horonobe assumed to have sufficient thickness of the host sedimentary formation at about 500m depth. The investigation included heli-borne survey (electromagnetic, magnetic and natural radioactivity), ground geophysical survey (electromagnetic survey), borehole investigation (two boreholes of 720m each) and geological investigation. The results of the investigation led to the selection of the candidate area for the laboratory site (approximately 3 km square in the Hokushin region) in July 2002. For the following fiscal 2002 continuing on to the present, the ground geological survey, geological investigation and borehole investigation (three boreholes of 520m each) are being conducted at the designated research area.

The research area is located in the Teshio sedimentary basin of the Neogene period. Sedimentary rock formations from the mid Miocene to the Pleistocene periods known as the Soya coal bearing formation, Masuporo, Wakkanai, Koetoi, Yuuchi, and Sarabetu formation overlie on the bedrock dating from the Cretaceous and Paleogene periods. There are many folds and faults running in the north-south direction, and in the central part of the town are eastward inclined reverse faults called the Ohmagari fault and Nukanan faults at a displacement of several hundred to a thousand and several hundred meters.

This report gives the results obtained from borehole and other investigations on the rock and mineral characteristics of the Neogene sedimentary rock (in the Koetoi and Wakkanai formations) around the research area.



SEM photographs of Koetoi Formation(a) and Wakkanai Formation(b)