Laboratory Evidence for Possible Microbially-Enhanced Smectite Formation

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Microbial activity can have a significant impact on geochemical processes as it can influence mineral dissolution and precipitation, pH, alkalinity and redox. Detailed studies of the subsurface microbiology of the SKB Hard Rock Laboratory, Sweden has revealed the presence of many different bacteria in the deep groundwaters which appear to be maintain reducing conditions in some fractures. A series of experiments were conducted to study the rock-water and microbial interactions further. These used combinations of crushed diorite, groundwater and iron and sulphate reducing bacteria in batch and flowing systems under both aerobic and anaerobic conditions.

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