

As-releasing experiments and gene analysis and fatty acid analysis of the cultured microbes

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Arsenic contamination in groundwater is a serious problem in Asia. We intended to disclose interactions effects between microbes and minerals in the process of arsenic dissolution. For this purpose, enrichment culture experiments were carried out using Bangladesh mud sediments and nutrients, glucose under N-gas environment. Arsenic was released when ORP decreased below zero. Gene analysis of the culture products was carried out to determine species of the microbes which are increasing in this reductive environment. The microbes were disclosed to be several types of Clostridium. Analysis of fatty acid as biomarker revealed that iron reducing bacteria were detected. Some Clostridium may be iron reducer. These results indicate that similar process may occur naturally if equivalent 'nutrients' are supplied.