

Geochemical behavior of arsenic and mechanism of its groundwater pollution in the northern part of Osaka Prefecture

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The formation mechanism of arsenic containing groundwater was studied in the northern part of Osaka Prefecture.

Total arsenic concentration in the spring waters varies within the range from 2ppb to 54ppb and arsenate is the most abundant arsenic compound. The primary source of arsenic in the groundwater must be pyrite in the host rocks, because the arsenic content of the groundwaters becomes higher with increasing arsenic concentration of the pyrite in the host rocks.

It is suggested that the adsorption of arsenic by soil particles such as iron oxides is a rule to control the arsenic concentration in the groundwater. The reduction of arsenic to arsine in groundwater associated with microorganic activity in the surrounding soil would also be an important controlling factor.