Stratigraphy and distribution of arsenic in drilling samples at Akiu spa in Sendai.

Yusuke Kanahara[1]; Hirokazu Fujimaki[2]

[1] Sci, Tohoku Univ; [2] Inst. Min. Pet. Econ. Geol., Tohoku Univ.

Hot spring waters at Akiu district in Miyagi prefecture contain abundant arsenic. The distribution of arsenic concentration in hot spring waters at Akiu was investigated. In this study, XRF, XRD, ICP-MS analyses were carried out for samples from a borehole hollowed to 1000m depth at Akiu in Miyagi prefecture. The layer of 10.5m~51m depth is dacitic and rhyolitic pumiceous tuff, those of 51~200m consist of sandstone and conglomerate, those of 200~288m are dacitic and andesitic tuffs, the layer of 288~785m is rhyolite, the layer of 785~961m is andesite, the layer of 961~1000m is altered basalt. Abundant arsenic was contained in conglomerate layer of 190m and andesitic and dacitic tuff layer of 280m, altered basalt of 970m. Layer boundaries and aquifers exist in these depths. Abundant arsenic tends to concentrate on such places. Most abundant arsenic was contained in altered basalt layer of 970m sample. This sample contains considerable amount of pyrite. So it is suggested pyrite is involved in high amount of arsenic concentration in this area.