

PIXE analysis of As and Cd from the 1000-meter deep core rocks drilled at Akiu, west Miyagi, Japan

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Abstract

A deep drill core sample from Yumoto, Akiu hot spring area, near Sendai, Miyagi, has been geochemically examined to confirm whether the geological cross section drawn from surface survey is adequate or not, and to search for the source of arsenic in the hot spring water. The geological column down to 1000 meter was completely different from the estimated one by surface field survey. Within 1000-meter drill core, we found three parts where arsenic is slightly high. It seems that arsenic appears at two different level of shallow depth. Near 1000 meter level arsenic appears again. A small amount of sulfide minerals were noticed at the three different depths. Cadmium appears but its amount is insignificant. The source of the arsenic could be either mineralization in progress beneath Akiu area or a small ore body that is now being destroyed.