

Geochemical study of hot springs for new geothermal exploration in eastern part of Toyama Prefecture, Japan

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Chemical and H and O isotopic compositions of 13 hot spring waters in eastern part of Toyama Prefecture were analyzed to examine their chemical characteristics and estimate the underground temperature for new geothermal exploration. On the basis of chemical and isotopic compositions, hot spring waters can be divided into two groups; low and high salinities. The low salinity group is of meteoric origin and high one is a mixture of sea water and meteoric water with oxygen isotope shift. The latter may be geopressed fluid, which is characterized by the high delta-D values of ca. -20 permil and medium Cl concentrations of ca. 6,000 mg/L as reported elsewhere. The results of estimated underground temperature support the view that the area along Kurobe River has one of the highest geothermal potential in the studied fields.