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# Isotope and chemistry study for genetic types of geothermal water in Gushi depression, Shaanxi Province, NW China

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ABSTRACT

Sedimentary environment and possible origins of geothermal water in the Gushi depression, Shaanxi Province, NW China are discussed in this paper based on the isotope and hydrochemistry characteristics of the geothermal water. The results illustrate that isotope and hydrochemistry characteristics in different parts of the study area show obvious differences, which indicate their different storage environments, recharge resources, and genetic types. The study expound for the first time that genetic types of geothermal water are various and the main genetic types of geothermal water include: (1) modern circulating water which host on an opener thermal environment; (2) residual connate water that may exist in a closed geothermal reservoir; and (3) the mixed water between 1 and 2.

*Keywords:* Gushi depression; Isotope and hydrochemistry characteristics; Sedimentary environment; Connate water

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