

## Groundwater Observation Network at Hot Springs in Sanin Area (Part 2)

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We have observed ground water temperatures and ground water levels at hot spring in Sanin area from March, 2001 (Nishida et al, 2002). This study is carried out as a part of Tottori west earthquake pulse projects in Rotary International district 2690. There is a lot of hot springs and earthquake is active in Sanin area, Tottori, Shimane and Okayama prefecture. The huge inland earthquake, 1943 Tottori earthquake (M7.2) and 2000 Tottori east earthquake (M7.3), was occurred in Tottori. We think that locations of hot spring have a relation to earthquake activity in this area.

The 8 observation stations, Tottori, Iwai, Misasa, Shikano, Okutus, Yubara, Chiya hot spring and Hino are working at present. Ground water temperatures are observed at all station and water levels are observed at Tottori and Iwai stations. As the water temperature observation system, the digital thermometer with 1/100 degrees accuracy and the data logger with 20bit resolution are used. The water temperature sensors are set to the points which water temperatures are most changing in the wells. As the water level observation system, water pressure transmitter with 0.2cm accuracy and the same data logger as the water temperature observation are used. The record interval is 1minute averaged record and the data is transferred by telemetry system. The data is corrected by using BAYTAP-G. The analyzed data is distributed by the Internet. The URL is as follows.(<http://hc2.seikyoku.ne.jp/home/ONSEN-kansoku/>)

The water temperature remarkably increased after the 3 earthquake events. After the earthquake of Tottori middle part (2002/9/16 10:10, Mj=5.3), the water temperature increased by 0.01 degrees and water level increased by 5cm at Tottori station, and the temperature increased by 0.05 degrees at Iwai station. After the Miyagiken-Oki earthquake (2003/5/26 6:24, Mj=7.0), the water temperature increased by 0.05 degrees at Iwai station. After the Tokachi-Oki earthquake (2003/9/26 4:50, Mj=8.0), the water temperature increased by 0.06 degrees and the water level had a small variation for 1 hour at Tottori station, water temperature increased by 0.5 degrees at Iwai station and the water level had a small variation for 3 hour at Okutsu station. On the 3days before the Tokachi-Oki earthquake, the water level had small variation at the Okutsu station.

### Reference

Nishida et. al., Seismological society of Japan fall meeting, 2002.