Groundwater temperature has been monitored in 300-m borehole kun-1 (Kunashir Island) since 2007 with the aim to investigate the origin of temperature variation and separate temperature changes associated with seismotectonic regime in the Kuril-Kamchatka seismoactive zone. Water level observations in the same borehole are performed by Geophysical service of RAS. The experiment reveals temperature changes in a wide interval of timescales (from a few minutes to some months) with amplitude from thousandths to tenth of degrees. Two distinct kinds of temperature changes may be singled out: the quasi-regular temperature oscillation and non-regular temperature changes. We suppose existing of at least three processes which are responsible for such changes i) tidal diurnal and semi-diurnal waves with amplitudes from 0.001 to 0.006 K (proportionally to the temperature gradient at a given depth). ii) Stochastic temperature changes with amplitude from 0.01 to 0.1 K caused by free intra-hole convection, and iii) non-periodic long-term temperature changes associated with tectonic regime and earthquake preparation. Pre- and co-seismic temperature variations were found in the temperature record at a depth of 240 m. These variations did not correlate with water level changes. The response to earthquake which had occurred to the south-east from the borehole (but not far than 300 km) with magnitude >5 is most noticed. Before the earthquake water temperature decreases during the period from some days to some weeks and increases after them. So temperature monitoring data in seismoactive zones may be considered as earthquake precursor.