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Is thermal pollution of the earth a man-induced geo-hazard?

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We made new temperature measurements in the deep boreholes of the Volga-Urals region in 2005. They confirmed that all production and injection wells in the oil and gas fields are the source of thermal pollution of the earth's crust. During the development, fluids (oil, gas or water) of a higher temperature move up the hole and change natural distribution of temperatures throughout the geological section up to the daylight surface. The analyzed temperature logs have recorded substantial changes in thermal regime (i.e. distribution of temperature, thermal gradients and heat flows) not only in working wells but also in those that have been shut-down for several years and even in the neighboring wells that have never been in operation. Significant temperature changes associated with petroleum development can be observed at the near-surface layer. Within the neutral layer at a depth of 4 m to 5 m the temperature change ΔT can reach 12˚C, and at a depth of 100 m ΔT can be as high as 16˚C. Warming of the earth surface by 10 to 12 ˚C can produce an irreversible impact on flora and fauna of the near-surface layer and even on the climate. Pollution of the environment by petroleum products is believed to be the major cause of ecological catastrophes directly associated with oil and gas development. Ecocatastrophes can also be caused by technogenic earthquakes due to the changes in hydrodynamic regime (formation pressure) provoked by oil and gas production or injection of sewage water. However, the long-term, intensive development can break the natural temperature balance throughout the geological section including the surface that can under certain conditions produce disastrous effects. Therefore, thermal pollution during the development of oil and gas fields seems of a man-induced geohazard.