



Thermal effects during CO₂ injection and well cementing at Ketzin

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Within the CO₂SINK project, borehole temperature monitoring is performed to derive information about in-situ formation temperatures and to detect processes related to the injection and movement of CO₂ in the subsurface. Both the injection well and the two observation wells at the Ketzin site are equipped with permanent fiber-optic sensor cables for distributed temperature sensing (DTS). Using DTS technology, quasi-continuous temperature profiles can be measured on-line along the entire length of the wells with high temporal and spatial resolution. The DTS sensor cables are permanently installed behind the borehole casing, which, in contrast to conventional wireline logging, offers the advantage of full access to the well during technical operations. Apart from long-term temperature monitoring during the injection process, this also allowed for better control of the process of casing cementation, which is crucial to ensure the required sealing capability of the borehole completion for CO₂ storage wells. Here we present results of the DTS monitoring performed during cementing operations and during the first 10 months of CO₂ injection at Ketzin.