

## Securing public safety on the surface above areas of mine subsidence during the mine flooding process

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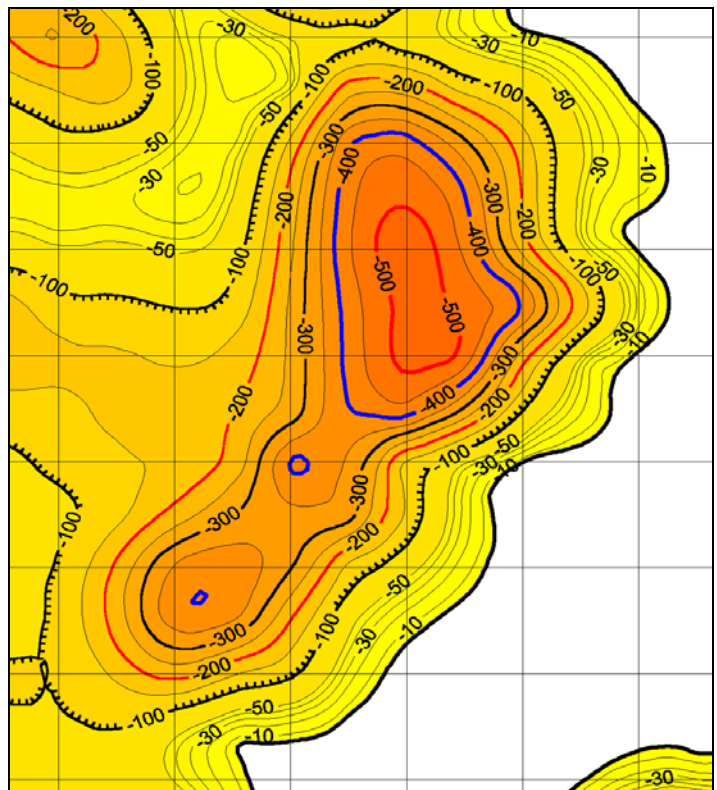
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**Objective:** Mining analysis for estimation of the surface deformation during mine flooding in the Ronneburg mining district

**Location:** Thuringia  
**Client:** WISMUT GmbH  
**Beneficiary:** WISMUT GmbH  
**Time period:** 1995 – 2000

### Initial situation:

As a result of the applied room and pillar methods in the uranium ore deposits of Ronneburg the mining damages on the surface have been arised. After serious initial deformations the surface damages became minimal in the meantime. However during the process of mine flooding their activation could be expected. During mine flooding it was necessary to consider an increase of the subsidence and the danger of cavity formation close to the surface.



*Mining damaged monitoring area*

### Services provided:

- Localisation of mining induced risk areas at the surface
- Prognostication of the probability of danger that cavities reach the surface
- Estimation of the positions of potential cavities and assessment of the long-term behaviour
- Cavity exploration by drilling from the surface
- Filling up the cavities with cohesive filling materials
- Estimation of the parameters related to the deformation process (subsidence, inclination, pressure and strain actions)
- Deduction of protection measures