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*Supplement of*

## **Investigation of Surface Exploration Programs for Hydrological, Hydrogeological and Hydrogeochemical Issues in the Site Selection Procedure**

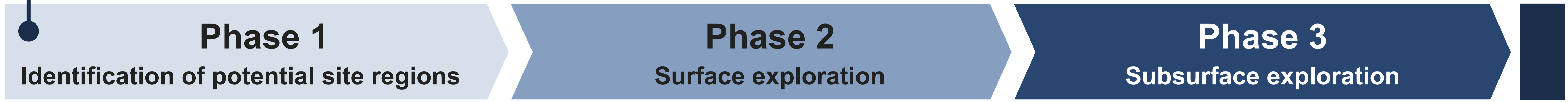
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# Project „übErStand“: Investigation of surface exploration programmes for hydrological, hydrogeological and hydrogeochemical issues in the site selection procedure

BASE-project: FKZ 4717F01201



## Step 1 Derivation of relevant parameters for surface exploration methods from the StandAG

- ✓ Systematic presentation and explanation of the specific criteria and requirements related to hydrology, hydrogeology or hydrochemistry from the StandAG.
- ✓ Derivation of relevant parameters for determination by surface exploration methods.
- ✓ Comprehensive compilation of parameters related to hydrology, hydrogeology and hydrochemistry for surface exploration of the three host rocks.

### Fluid motion and transport relevant rock properties

sorption  
E<sub>h</sub>  
pH  
major and trace elements  
ionic strength  
viscosity  
density  
isotopic ratio  
conductivity/salinity  
colloids

transmissivity  
flow velocity  
hydraulic gradient  
diffusion  
tortuosity  
porosity  
consolidation (clay)

### Hydrochemistry

## Geohydraulic methods

## Surface geophysical exploration methods

## Borehole geophysical exploration methods

## Laboratory tests, field tests

## Step 2

### Description of exploration methods used to determine identified parameters

- ✓ Elaboration of the relevant and suitable surface exploration methods according to the current state of the art in science and technology.
- ✓ Description of ranges, reproducibilities, detection limits, advantages and disadvantages and possible combinations with other methods.
- ✓ Consideration of the three different host rocks.
- ✓ Allocation of the "most suitable" exploration methods to all relevant parameters for surface exploration programs at siting regions (generic).

## Step 3

### Classification and derivation of an orientation framework

- ✓ Requirements for complete documentation and quality assurance.
- ✓ Criteria for evaluating the quality and quantity of measured values and the results.
- ✓ Factors influencing the criteria for selecting suitable measurement methods for determining the measured quantities in accordance with the StandAG.
- ✓ Factors influencing the criteria for selection of suitable measurement densities and measurement intervals.

### Parameters to measure

Measuring methods

Sequence, necessity, ...

Measuring density

Host rock dependence, ...

Measuring intervals

Quality vs. quantity, ...

Gradual adaptation to site conditions and available data

**Orientation framework:**  
Evaluation of proposals for the surface exploration of site regions

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