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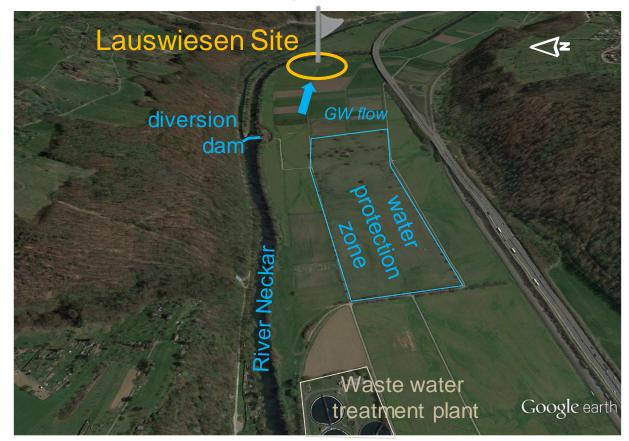
# The Hydrogeological Test Site Lauswiesen

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# Lauswiesen Hydrogeological Test Site

Neckar valley east of Tübingen





Test site in the Neckar valley established in 1996 EBERHARD KARLS UNIVERSITAT TÜBINGEN FACULTY OF SCIENCE Center for Applied Geoscience

# **Geological setting**



- Unconsolidated, quaternary sediments underlain by Triassic claystone
- Gravel with small amounts of sand and fines, partly cobbles

3,5

4,0

4,5

5,0

5,5

6,0

6,5

7,0

7,5

8,0

Depth in meter

percentage

82

80

77

87

81

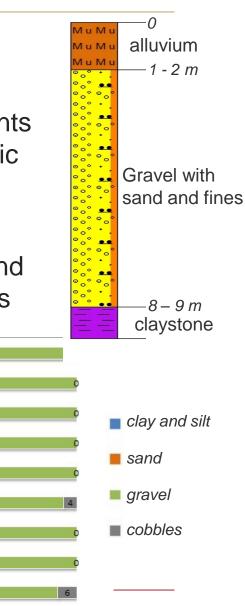
77

84

64

11

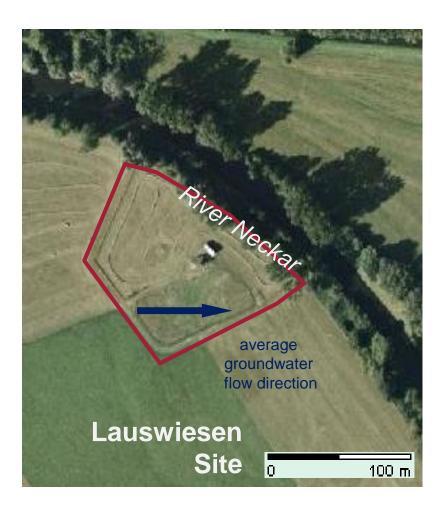
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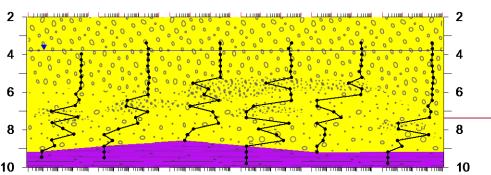
# Hydrogeological setting

- Unconsolidated and unconfined aquifer
- Depth to water table: 3 4 m saturated thickness: 6 - 7 m
- hydraulic gradient: 3 ‰
- strong hydraulic interaction with River Neckar
- K<sub>average</sub> = 3 x 10<sup>-3</sup> m/s



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#### Hydrogeological setting 307 Flowmeter testing Direct Push based - 306 **Injection Logging** 5 305 0 - EIncD ... 9. 304 6 ΠŪ B E rD. OD r 7 Q. D. 303 0 G. Β1 0-8 10 ...... B2 B R STR 11Em 00 B 11 n CIII **B**3 ameralp do g.fc 8 B4 302 B5 EI. B6 00 Β7 000 000 000 301 . -12 -10 -8 -6 -4 -2 InK In K<sub>relative</sub>



Depth to Ground Surface (m)

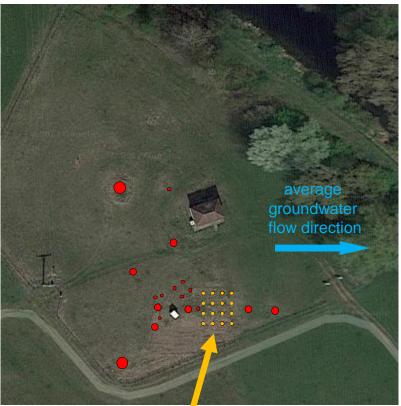
Vertical variability of horizontal hydraulic conductivity

-2



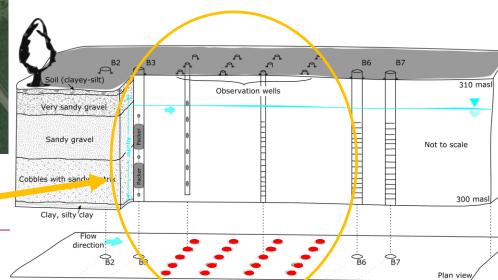
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# Well inventory



Well field for tomographic surveys (20 small diameter wells)

- 10", 7", 6", 2" and 1" wells
- several mutli-level (CMT) wells
- Well field for tomographic surveys
- 2 large diameter water supply wells
- 1 horizontal well

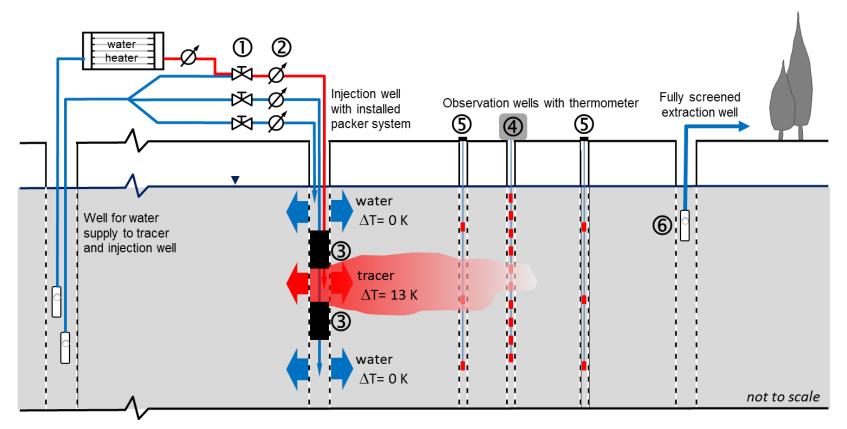


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# **Tomographic tracer testing**

here: heat tracer testing





### Current work and possible test settings

Data = data sets available w.i.p. = work in progress

Hydrogeological testing	data	w.i.p.
Pumping test with many observation wells	$\odot$	
Borehole testing in fully screened wells	$\odot$	
Direct Push-based hydraulic profiling (vertical K-profiles)	0	
Heat tracer tests in ambient and forced gradient flow fields	:: :	
Tomographic heat tracer tests	$\odot$	MSc
Tomographic <b>solute</b> tracer tests	٢	PhD,MSc
(Geo)chemical monitoring (micropollutants) etc.	$\odot$	MSc
Geophysical / hydrogeophysical testing		
Tomographic salt tracer tests with ERT monitoring)	$\odot$	ENIGMA
2D-/3D-electrical resistivity surveys	$\odot$	ENIGMA
2D (refraction) seismic surveys	٢	
Georadar	$\odot$	