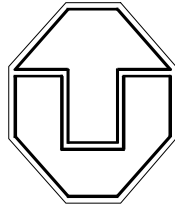


IWW



Technical University of Dresden



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Natural Attenuation processes for the remediation of a wood impregnation site

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1. The distribution of contamination at the industrial site

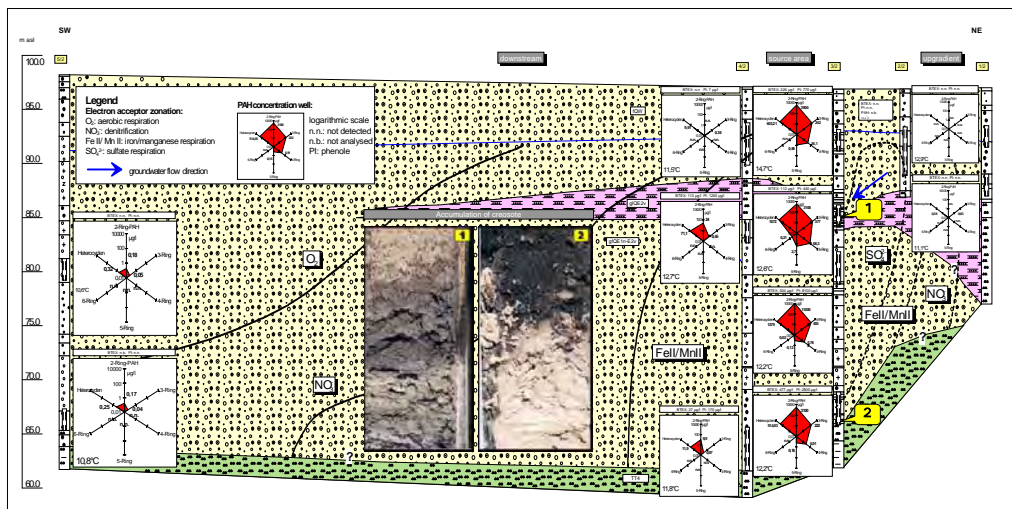


Fig.1 – Hydro geological cross section showing the distribution of PAH and BTEX

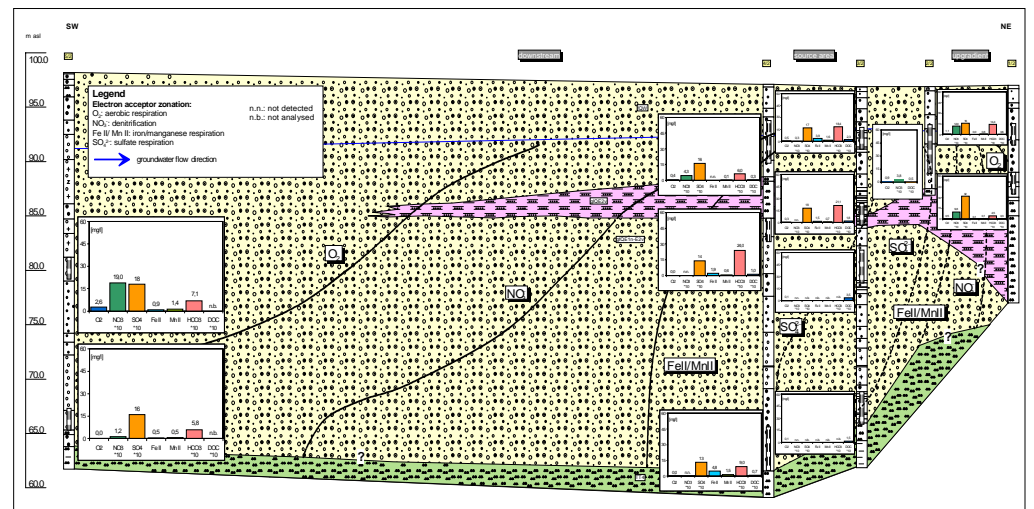


Fig.2 – Cross section showing the electron acceptor concentration

2. Footprints of the natural attenuation processes

Table 1 – Aqueous concentration of organic contaminants

Parameter		Background	Source area concentration range	Downgradient (1,870 m)
BTEX	µg/L	n.n.	112 – 504	n.n.
Phenol	µg/L	n.n.	440 – 8 100	n.n.
TPH	µg/L	n.n.	n.n. – 960	n.n.
PAH	µg/L	n.n.	3 840 – 12 800	0,5

n.n. – not detected

Table 2 – Electron acceptor and metabolic by-product concentration

Parameter		Background	Source area concentration range	Downgradient (1,870 m)
Electron acceptors				
Oxygen	mg/L	5	0,2	1,3
Nitrate	mg/L	109	6,6	100
Sulphate	mg/L	240	156	170
Metabolic by-products				
Iron (II)	mg/L	0,1	2,4	0,7
Manganese (II)	mg/L	0,5	0,9	1,0
DOC	mg/L	5	16	n.b.
HCO ₃ ⁻	mg/L	95	157	65
pH – value		6,7	6,6	7,0

n.b. – not analysed

3. Experimental set-up for the on-site system

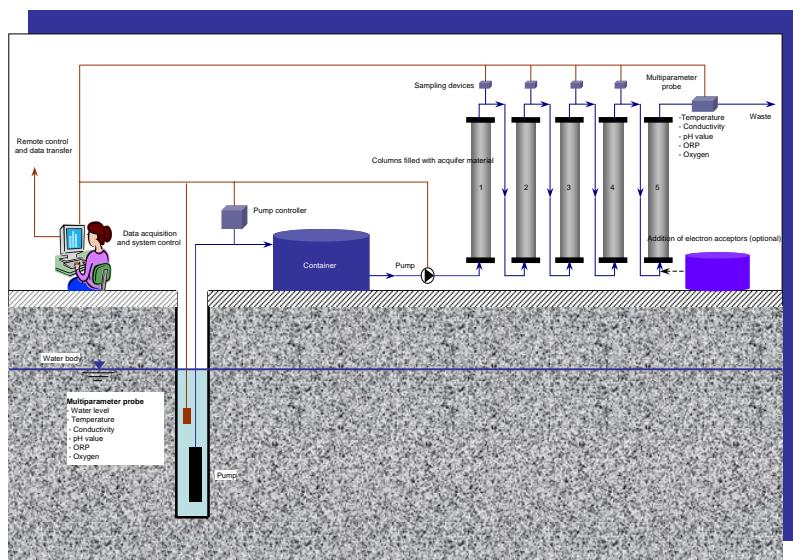


Fig.3 – Columns experiment for on-site simulation of groundwater processes

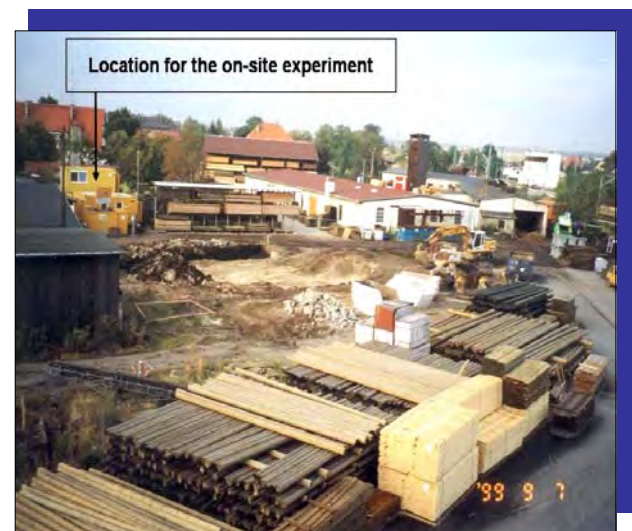


Fig.4 – View of the industrial site