Long-term prediction of release from a stabilised waste monofill and identification of controlling factors

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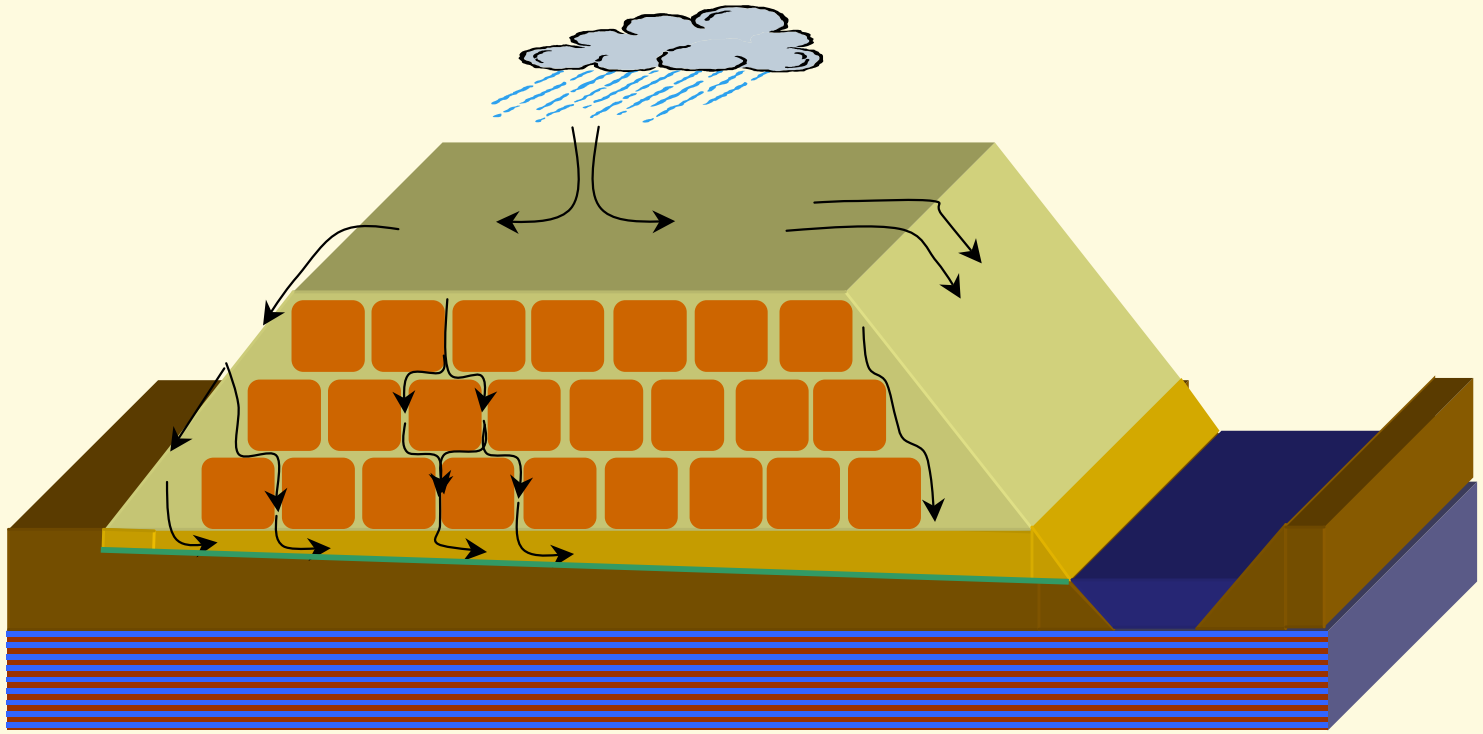
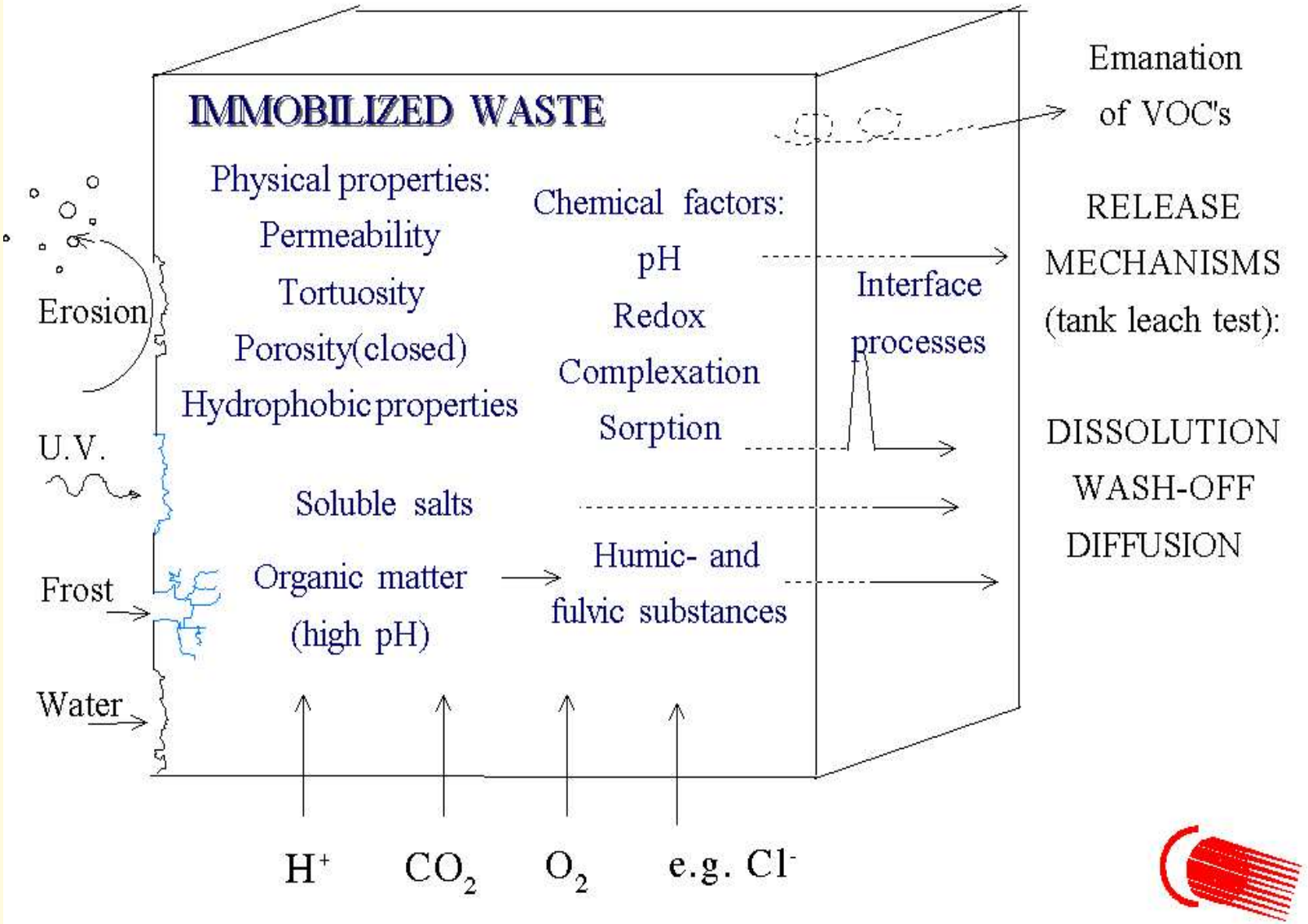
DISPOSAL OF WASTE IN A STABILISED WASTE LANDFILL

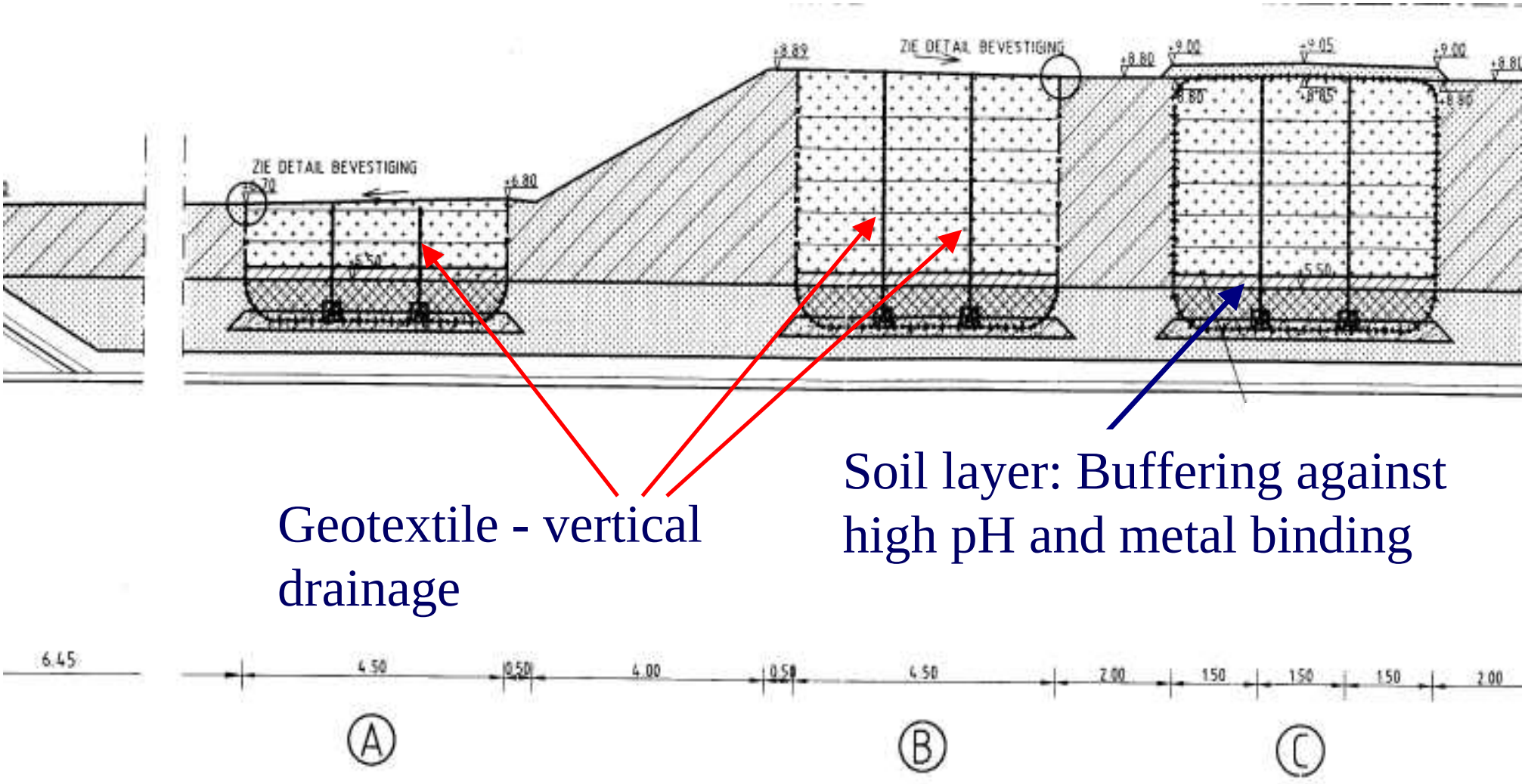


- **Hazardous** waste to **Non-hazardous** waste
- From **percolation** dominated to **diffusion** dominated release

CHEMICAL AND PHYSICAL FACTORS CONTROLLING RELEASE FROM IMMOBILIZED WASTE



Set-up VBM Pilot experiment (Front view)



Geotextile - vertical drainage

Soil layer: Buffering against high pH and metal binding

Setup pilot experiment

Buffer capacity soil layer 1 meter high

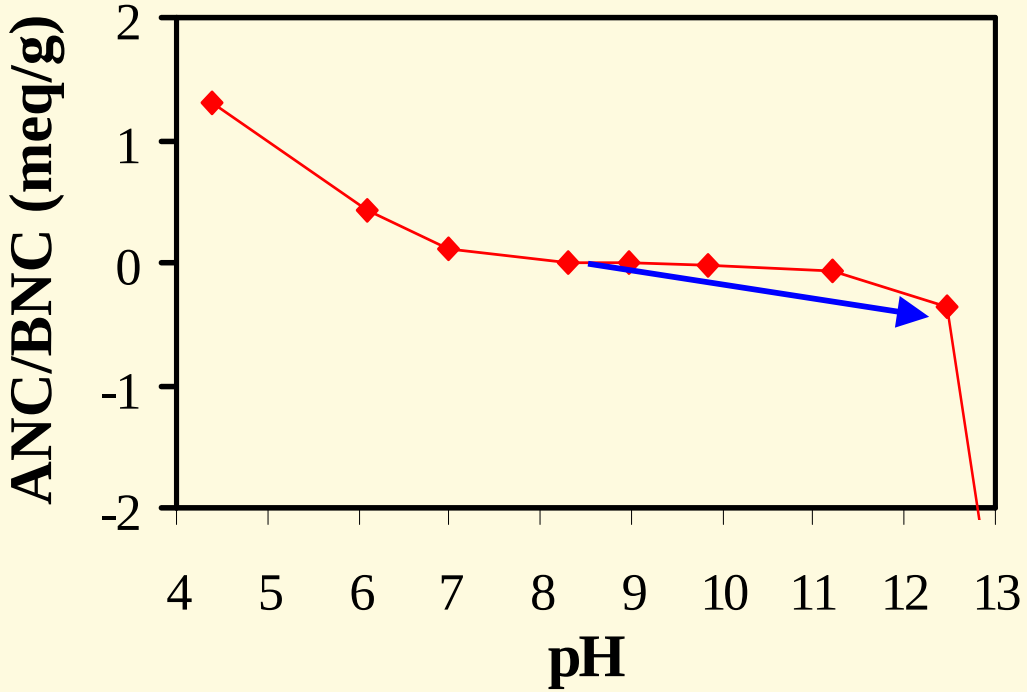
Density = 1500 kg/m3

ANC = 0.35 meq/g

Infiltration = **300 mm/yr**

Height = 30 m

Neutral percolate estimation:



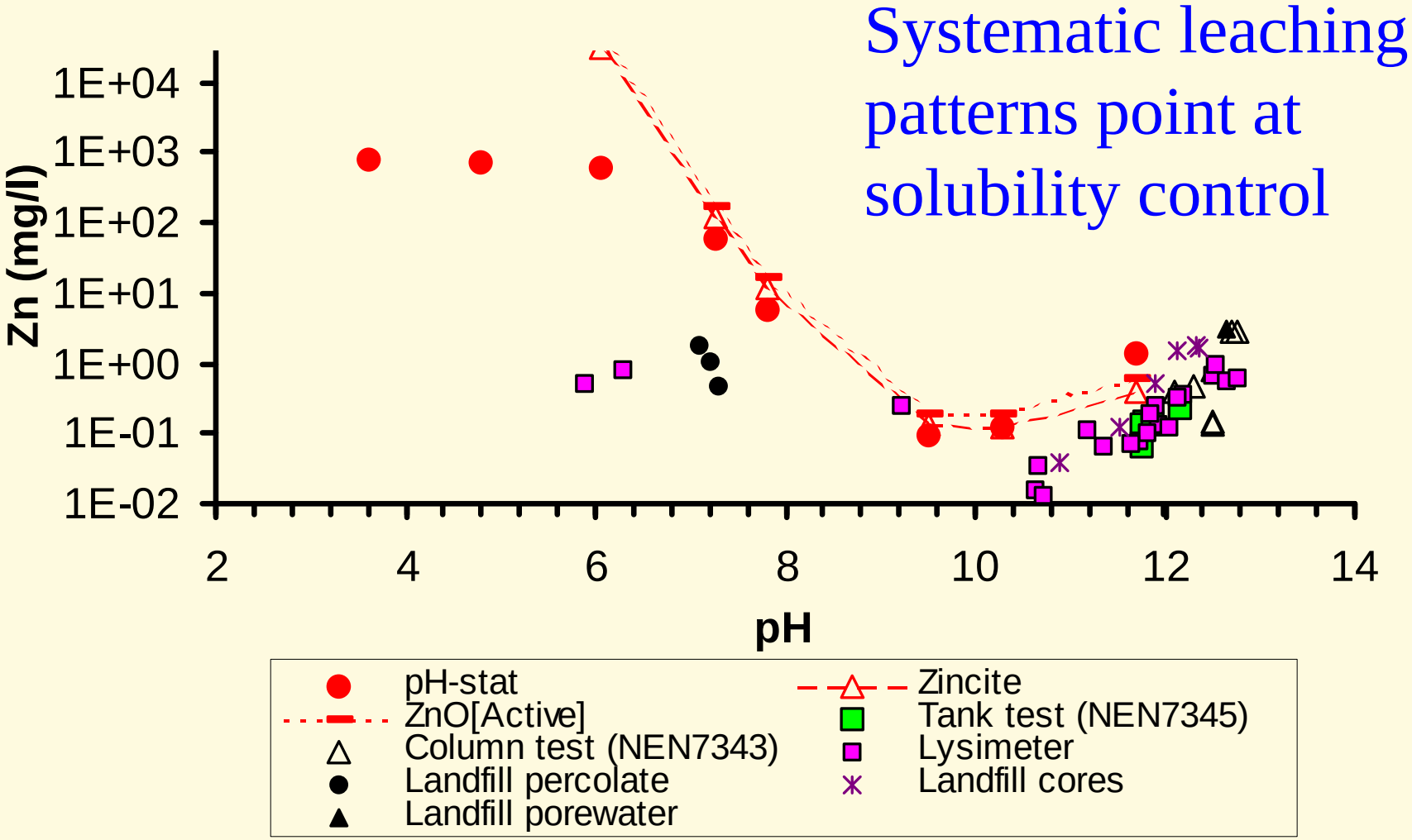
Percolate pH = 12.5:

55 years

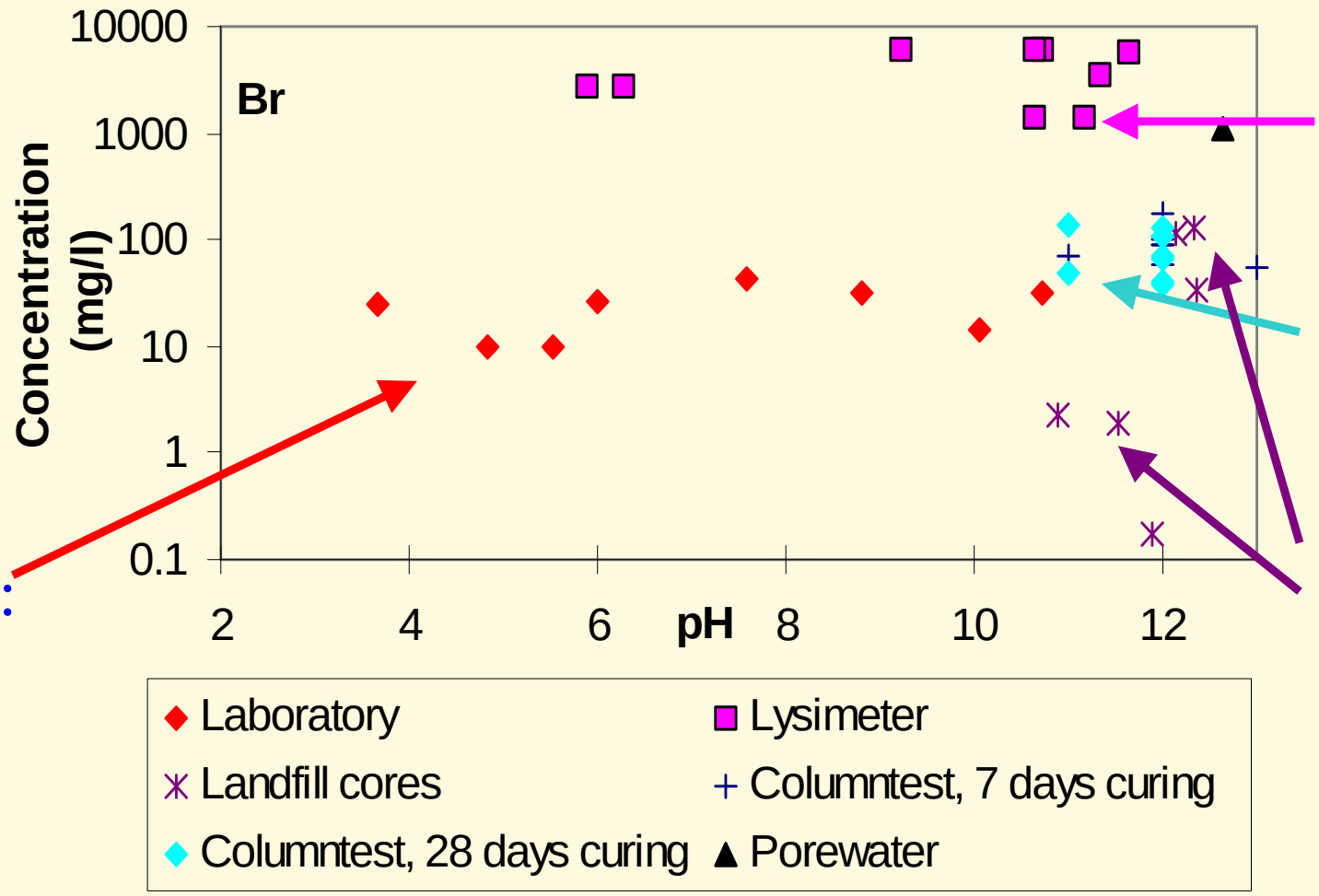
Percolate pH = 12:

175 years

Integration of test results for Zn



Emission of soluble salts



Landfill cores: very low L/S (0.01?)

Columntest : L/S=1

Lysimeter: varying L/S

pH-stat: L/S=10

CONCLUSIONS

Soil layer important factor in design of landfill

VBM pilot experiment unique in its set-up due to the combination of different levels of testing and modelling of chemical processes

Results from the combination of different testing scales are promising and have led to better understanding of processes. This allows development environmental of impact scenario

Integration of test results for Mo

Different experiment scenarios; Same Geochemical processes