

SKB:s work within BELBaR

Patrik Sellin

SKB

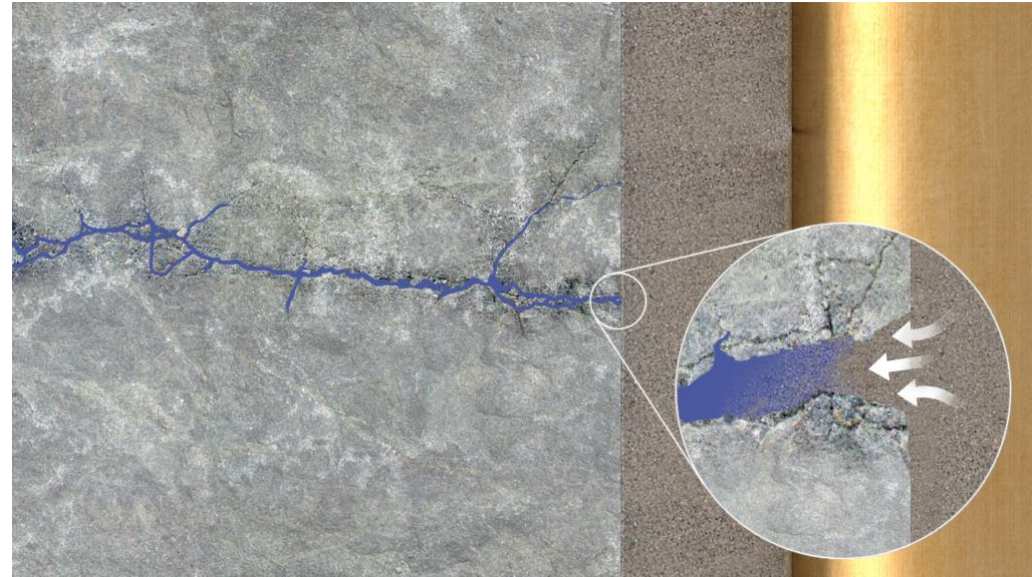
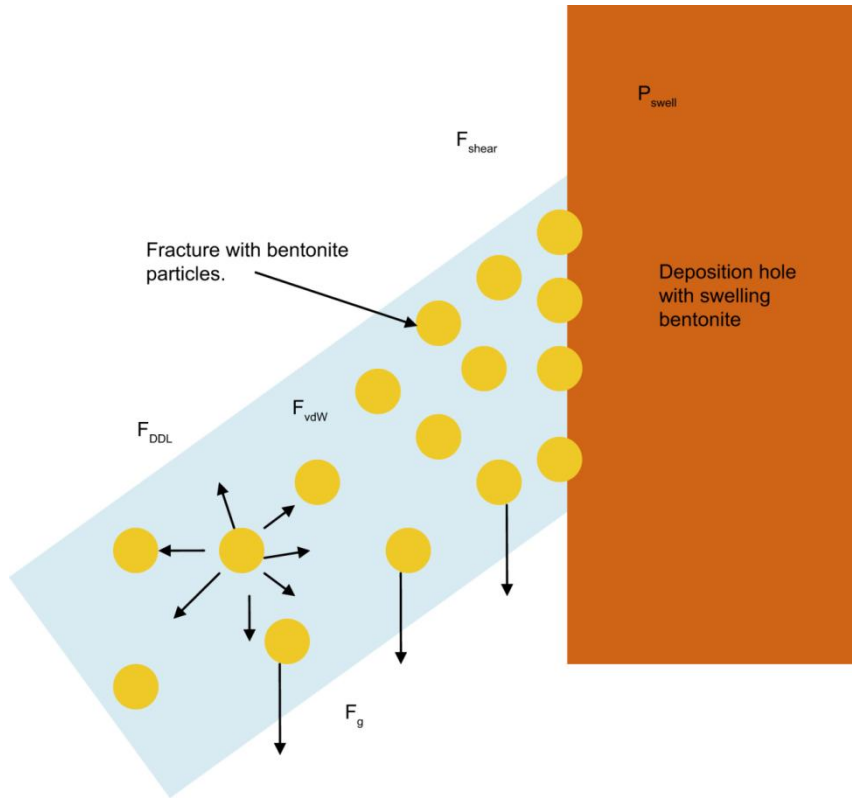


BELBaR

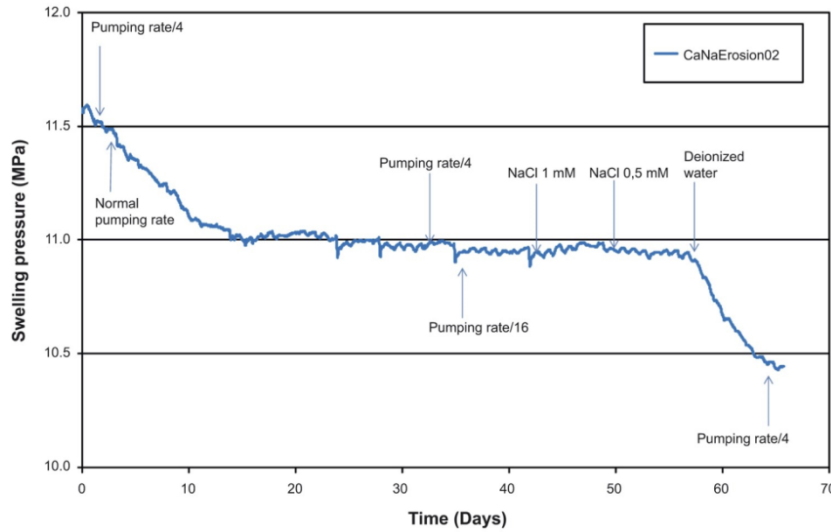
- Background
 - Colloid release from buffer and backfill
 - In the safety assessment SR-Site (2011)
- Activities



Colloid release from buffer and backfill



Colloid release from buffer and backfill



$$R_{\text{Erosion}} = A \cdot \delta \cdot v^{0.41}$$

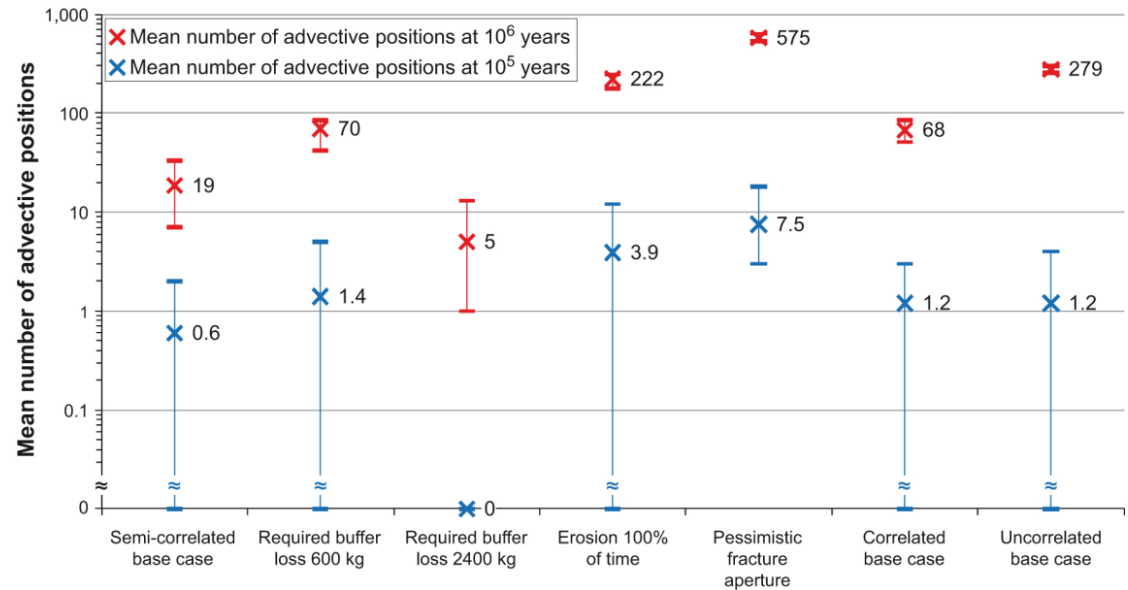
Water velocity, [m/yr]	Smectite release for 1 mm fracture aperture, [g/yr]	Penetration into the fracture at the centre, [m]
0.10	11	34.6
0.32	16	18.5
0.95	26	11.5
3.15	43	7.0
31.50	117	2.1
315.00	292	0.5

With calcium in the system, erosion occurs below ~ 2 - 4 meq/L (when chloride is the anion)



Colloid release from buffer and backfill

- Uncertainties
 - How much bentonite can be lost before advective condition occur
 - Homogenisation?
 - Fracture apertures?
 - Future groundwaters?



Activities

- Coordination and dissemination work
- Support to activities at KTH and Clay Technology
- Application of project results in safety assessments

