REMTECH EXPO

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Innovative passive sampling technology for improved groundwater and surface water monitoring.

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SESSION: INNOVATIVE TECHNOLOGIES IN SITE CHARACTERIZATION AND SITE REMEDIATION

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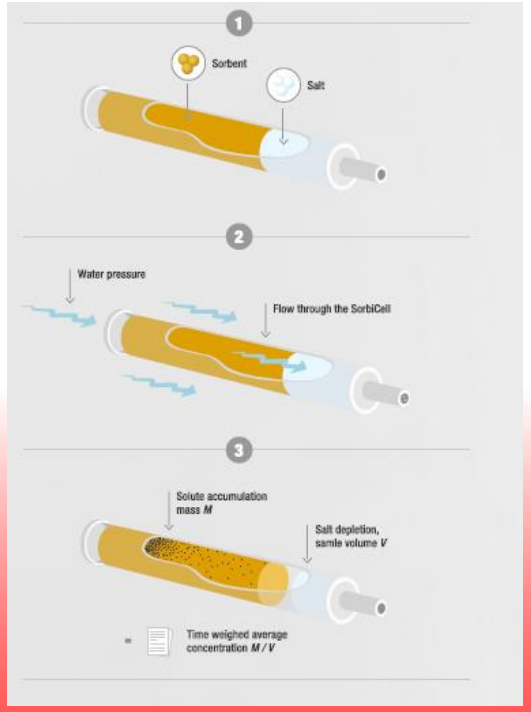
SorbiCell overview

- Advective Flow passive sampling
- Accumulated average concentration
- No use of electricity, pumps etc.
- Applicable for ground- and surface water

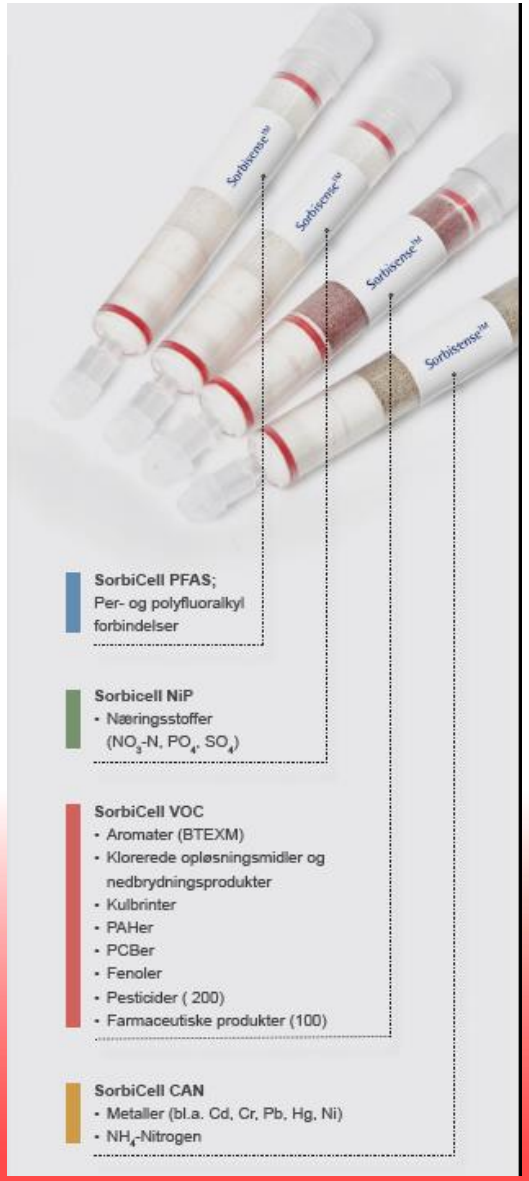
- Hydraulic pressure creates flow
- Sample volume typically 300-500 ml
- Solutes are adsorbed (mass M)
- Tracer salts is eluted in proportion to water volume (volume V)
- Solutes analysed and concentration derived from M/V



SorbiCell types - adjusted according to chemical groups

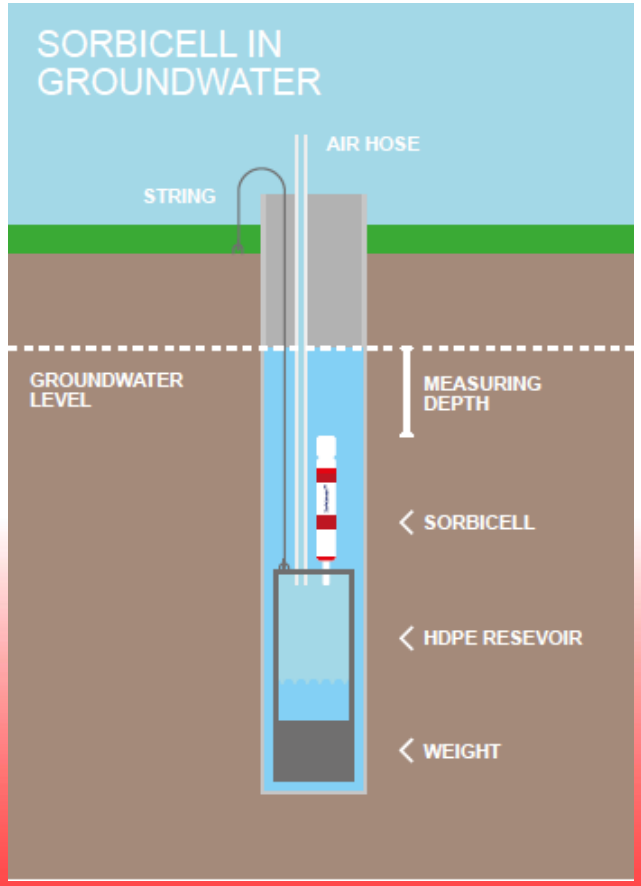
- VOC: aromatics (BTEXM), halogenates, hydrocarbons (oil, fuels), PAH´s, pesticides
- CAN: metals, ammonium-N
- NiP: nitrate-N, phosphorus
- PFAS (PFC's.)

- Wide range of accredited analytical methods available (GC-MS, LC-MS, ICP)



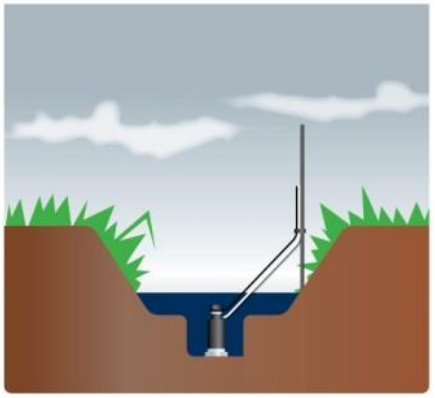
Installations in groundwater wells

- Mounting in groundwater wells (2inch)
- Submerged under water table
- Water is pressed through the cell by hydrostatic pressure
- Air is pressed out through the tube
- Reference/field volume
- Typical measurement interval: 2-4 weeks
- Possibilities for multi-level sampling
- Depth range: 0,5-150 m.u. water level



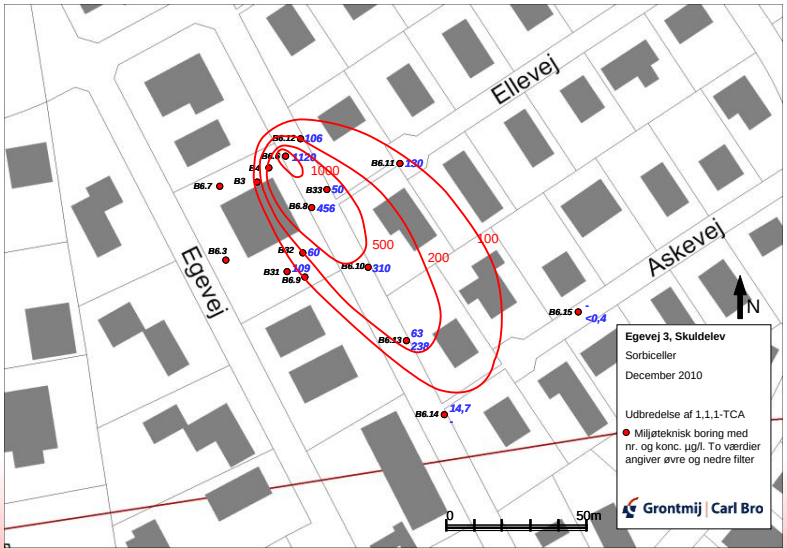
Installations in surface water

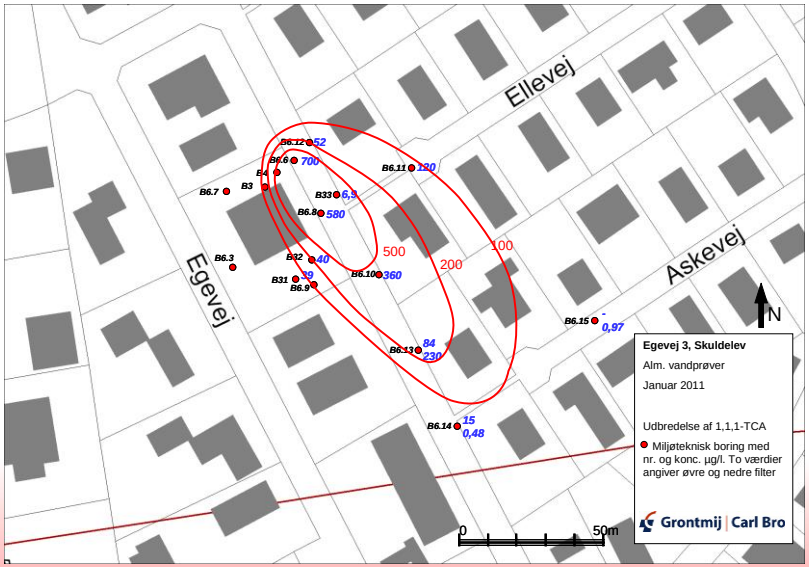
- Mounting SorbiCell is fitted in the collector and is lowered beneath the water surface
- Water is pressed through the cell by hydrostatic pressure
- Air is pressed out through the tube
- Typical measurement interval: 2-4 weeks
- Depth range: 0,5-10 m.u. water level



Groundwater case: Capital Region of Denmark

- plume delineation in 3D; Chlorinated solvents



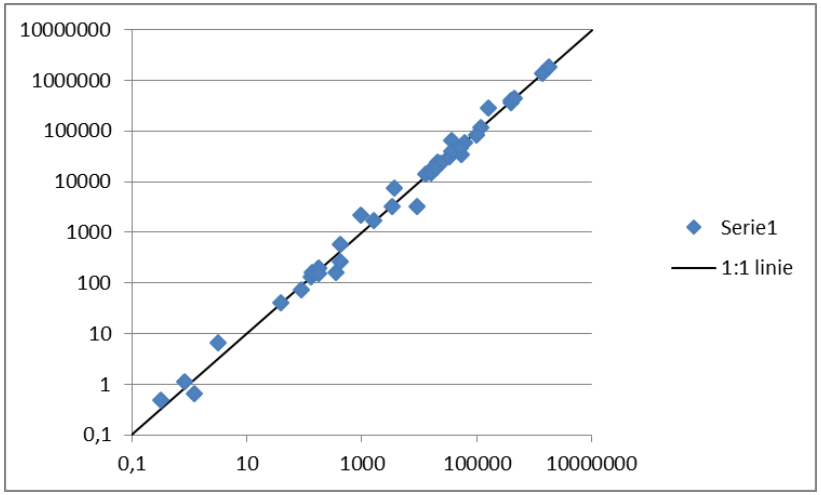


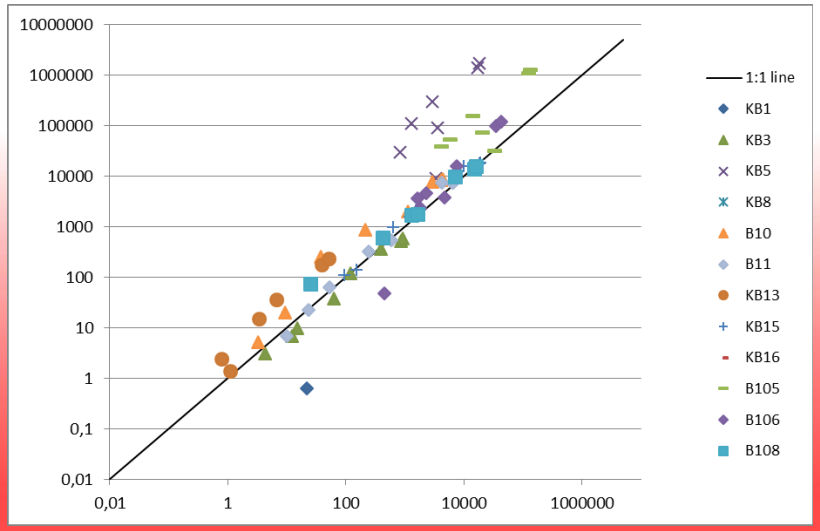
Short filters / horizontal plume delineation

Groundwater Case: Oil company

- Fuel spill and monitoring of plume removal

- Full-scale monitoring of plume mass balance at gas station
- Duplicate analyses shows high precision over six orders of magnitude of concentration range (RSD = 17%)
- 1:1 comparison with grab samples shows highly comparable results
- Up to 70% time-savings in field
- Also applicable for low-yielding wells



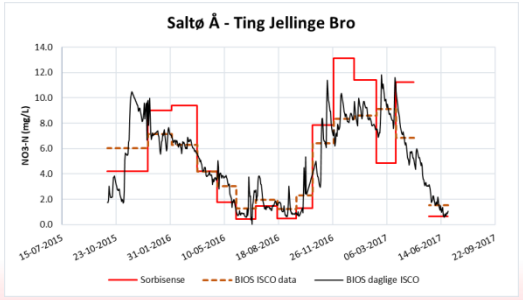


Surface water Case: SEGES / Aarhus University

- Nitrate monitoring in streams

- Full-scale monitoring nitrate concentrations in surface water streams
- Monthly sampling and comparison with daily grab samples shows highly comparable results
- High potential of cost savings

- Useful for screening and pollution mass balances in streams



Key advantages

- Accumulated average concentration rather than a “snap-shot” value
- Suitable for a wide range of contaminants, i.e. organic volatiles AND non-volatiles; inorganic macro AND micro constituents
- Direct, transparent volume-based calculation of solute concentrations (no equilibrium assumptions, no diffusion calibration)
- Easy field procedure, single-person operation
- No electrical components and subsequent safety precautions at hazardous sites
- Improved logistics

GRAZIE PER L'ATTENZIONE,

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