Natural attenuation of petroleum hydrocarbons in Sweden

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In co-operation with
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Project time 2001-2003

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Goals

* by full-scale field tests examine the potential for natural attenuation of petroleum hydrocarbons in Sweden

* on the basis of international knowledge and field-experiences draw Guidance for MNA in Sweden

Sollentuna

Conclusions Sollentuna

Natural Attenuation is active but great amounts of BTEX makes the methods not realistic for remediation. A remediation time of several hundred years to reach target values.

MNA can be used to set the remediation limits for active remediation methods

Experiences from the field-tests

- Geological and hydrogeological model
- Sampling quaternary during the initial phase (1-2 year). After two years the sampling frequency normally can be less
- Field investigations must be carefully planned and adjusted to the MNA-investigations. Not always rational to build on MIFO phase 2. Instead the field installations from the MNA investigations can be used with active methods
- Results from the MNA investigations may be used for several purposes, e.g. to set remediation-limits for other more active remediation methods
- The used field methodology with bladder pumps and flow cell did work out OK. The method is reasonable field adjusted, but the equipment must be maintained and handled in a proper manner

Advantages with Natural Attenuation

Pollutants to water and carbon dioxide

Minimal disturbance of the surroundings

Small risks for workers and public

Can be combined with other methods

Cost-effective

No extra work – the field investigations are needed even with active measures

No technical equipment on the site is needed

The most problematic hydrocarbons, BTEX, are also relatively easy degradable

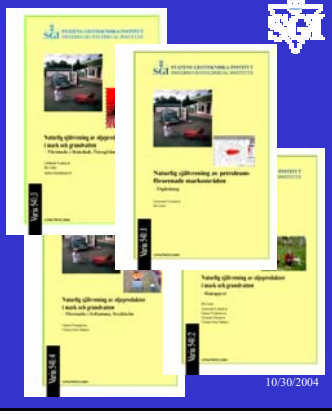
Drawbacks with Natural Attenuation

Slow remediation rate

Long time to reach the remediation goals – changes at the site may occur

Long-time control

Problems with acceptance for ”doing nothing”



Four reports on the web
www.swedgeo.se

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