

Investigation of leachate from landfill using integrated sampling

Project reference

Project:

Pilot project in Ersmarksdeponin landfill in Umeå county

Customer:

Umeå county, Sweden

Project period

1999

Nature of task:

Development of new monitoring strategy for landfill:

- Time integrated monitoring of bioavailable fraction of PAH and PCB in landfill leachate (surface water and groundwater);
- In-situ monitoring of free metals;
- Monitoring of acute leachate toxicity;
- Monitoring of TOC and physical parameters of leachate



Damage on Spruce tree needles from the vicinity of leachate surface water



Summary

The content of leachate from municipal landfills are largely unknown and there are no complete control programs for leachate monitoring. This study suggests an alternative approach for the monitoring of leachate from municipal landfills. Results of leachate sampling revealed high potential of use of SPMD, DGT and SPMD-toxicity for monitoring of parameters that have actual environmental impact.

Advantages of techniques suggested in this study:

- SPMD (semipermeable membrane device): time integrated, for detection all range of hydrophobic compounds.
- DGT (diffuse gradient in thin film): time integrated, measure bioavailable metals instead of total.
- SPMD-toxicity: not require any special pretreatment.

← Ground water sampling with SPMD

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