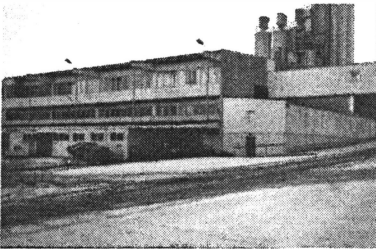


IN-SITU BIO-REMEDIATION OF HIGHLY TOXIC SUBSTANCES IN SOIL AND GROUNDWATER – A RECENT EXAMPLE IN SOUTHERN SWEDEN

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CLIENT: TARKETT SOMMER, RONNEBYHAMN



Type of contamination:
Phthalics, Alifatics, Aromatics

KEYWORDS

Bioremediation In-situ, closed system, bioremediation in soil and groundwater with minimum disturbance of ongoing activity in the factory, volatile compounds when bioremediating Phthalics

1 SUMMARY OF THE SEMINAR

- Introduction of project
- Project execution, technical and biological experiences
- Observations on volatile compounds/residues when bioremediating Phthalics in-situ

2 PROBLEM DESCRIPTION

For many years the company manufactured PVC-products, where industrial softener containing Phtalics was one heavy component.

In one of the production facilities cleaning of extruders and tools took place in a fairly large scale. The process did require strong solvents, which mixed with the Phtalics during the years managed to leak under the concrete floor and pollute the soil and groundwater underneath the building.

The company made a risk assessment and decided that the contamination problem should be addressed in the best possible way.

As full production is going on in the facility, an in-situ solution appeared to be the best solution to the problem.

An initial pilot- and feasibility project was executed with very promising result, also for the Phtalics, whom for long have been regarded to be almost impossible to degrade biologically.

3 PROJECT EXECUTION

The application, a hermetically closed system, in which prospective hazardous residue products in the form of gas are evacuated through a vacuum facility, was installed.

The groundwater underneath the building is re-circulated and will pass a dialyze facility in which a cleaning and enriching process takes place. In this phase also temperature, PH and other essential basics for maximum biological activity is safeguarded.

The project is regarded as extremely interesting and many institutions are following the results closely.

In this project we have also established a co-operation with the Royal Institute of Technology (KTH) in Stockholm for research work on prospective non foreseen residue products in the process.

The initial phase of the project did manifest extremely positive result in the remediation of as well the petroleum hydrocarbons as the Phtalics in the soil and groundwater.