

Degradation of PAH at Frederiksberg Gasworks Site: Lab-scale and Field Experiments

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The PAH-degrading potential in a coal tar-contaminated soil was investigated. The results indicated that the soil contained an 'indigenous' PAH-degradation potential. Concentrations of the PAH compounds determined were low. The contaminants had been aged for over 30 years, indicating low bio-availability. Ten surfactants were screened for their ability to mobilise PAH from the contaminated soil. Significant differences were found between surfactants. A one-year microcosm study aimed at investigating the effects of temperature and surfactants on PAH-degradation. Temperature had no effect.

Surfactant had only an initial effect on the PAH-removal, presumably due to biodegradation of the surfactant. The PAH concentrations of phenanthrene, anthracene, fluoranthene, pyrene and benzo(a)pyrene decreased due to biological processes during the experiment with respectively 66, 74, 66, 64 and 71%. In a field experiment the effects of surfactant, compost, bark chips, turning, venting and weathering were investigated. The soil was arranged in windrows of 35 m³ soil. Preliminary results will be discussed.