Fate of organic contaminants in the redox zones of a landfill leachate pollution plume (Vejen, Denmark) - DTU Orbit (09/08/2019)

Samples from 75 sample locations in a landfill leachate pollution plume reveal a significant disappearance of specific organic compounds (SOC's) within the first 100 m of the plume. Only the herbicide Mecoprop® (MCPP) migrates further. Since sorption and dilution cannot account for the decreasing concentrations, degradation is considered to be the governing process. Non-volatile organic carbon shows a corresponding fate probably acting as a substrate for the microbial processes. The first 20 m of the plume are methanogenic/sulfidogenic, judged on the chemistry of the groundwater, followed by a significant ferrogenic zone exhibiting a substantial capacity to degrade the SOC's. The presence of intermediary products (here an oxidized camphor compound) supports the concept of degradation within the ferrogenic zone. This investigation draws the attention to the significant natural attenuation of organic contaminants and to the so far neglected ferrogenic zone in controlling the fate of organic contaminants in leachate plumes.

General information
Publication status: Published
Organisations: Department of Environmental Science and Engineering, Residual Resource Engineering, Department of Environmental Engineering
Contributors: Lyngkilde, J., Christensen, T. H.
Pages: 291-307
Publication date: 1992
Peer-reviewed: Yes

Publication information
Journal: Journal of Contaminant Hydrology
Volume: 10
Issue number: 4
ISSN (Print): 0169-7722
Original language: English
Source: orbit
Source-ID: 312681
Research output: Contribution to journal › Journal article – Annual report year: 1992 › Research › peer-review