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PII: S0304-3894(17)30434-X
DOI: http://dx.doi.org/doi:10.1016/j.jhazmat.2017.06.013
Reference: HAZMAT 18634

To appear in: *Journal of Hazardous Materials*

Received date: 28-3-2017
Revised date: 4-6-2017
Accepted date: 6-6-2017

Please cite this article as: Douglas O.Pino-Herrera, Yoan Pechaud, David Huguenot, Giovanni Esposito, Eric D.van Hullebusch, Mehmet A.Oturan, Removal mechanisms in aerobic slurry bioreactors for remediation of soils and sediments polluted with hydrophobic organic compounds: An overview, Journal of Hazardous Materialshttp://dx.doi.org/10.1016/j.jhazmat.2017.06.013

Removal mechanisms in aerobic slurry bioreactors for remediation of soils and sediments polluted with hydrophobic organic compounds: An overview

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Highlights

- The HOC-contaminated soil treatment using soil slurry bioreactors is reviewed.
- The main HOC-removal mechanisms, such as biodegradation, gas-liquid and solid-liquid transfer are identified.
- These mechanisms compete to determine the pollutant removal rate. Their importance will depend on the pollutant type and nature, the soil or sediment characteristics and the operational parameters.
- HOC volatilization and oxygen transfer are the less studied processes in these systems. Researchers often neglect them, but, in some cases, they can control HOC removal.
- Research directions regarding bioslurry technology are identified.

Graphical Abstract