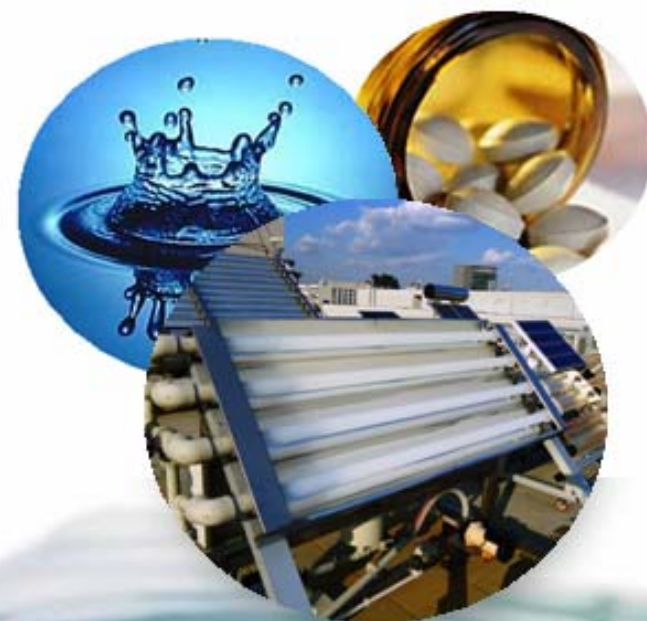


Lorazepam's (Lorenin®) TiO₂-Solar Driven Photocatalytic Degradation using a Pilot Plant with CPCs: Application to the Treatment of Municipal WWTPs' Effluents containing Pharmaceutical Compounds



M.A. Sousa^{1,2}, C. Gonçalves^{1,2}, V. Vilar³, R. Boaventura³, M.F. Alpendurada^{1,2,*}

¹ Laboratory of Hydrology, Faculty of Pharmacy, University of Porto, Portugal

² IAREN – Water Institute of the Northern Region, Matosinhos, Portugal

³ Laboratory of Separation and Reaction Engineering (LSRE), Faculty of Engineering, University of Porto, Portugal

*E-mail: mfalpendurada@iaren.pt

Emerging Pollutants

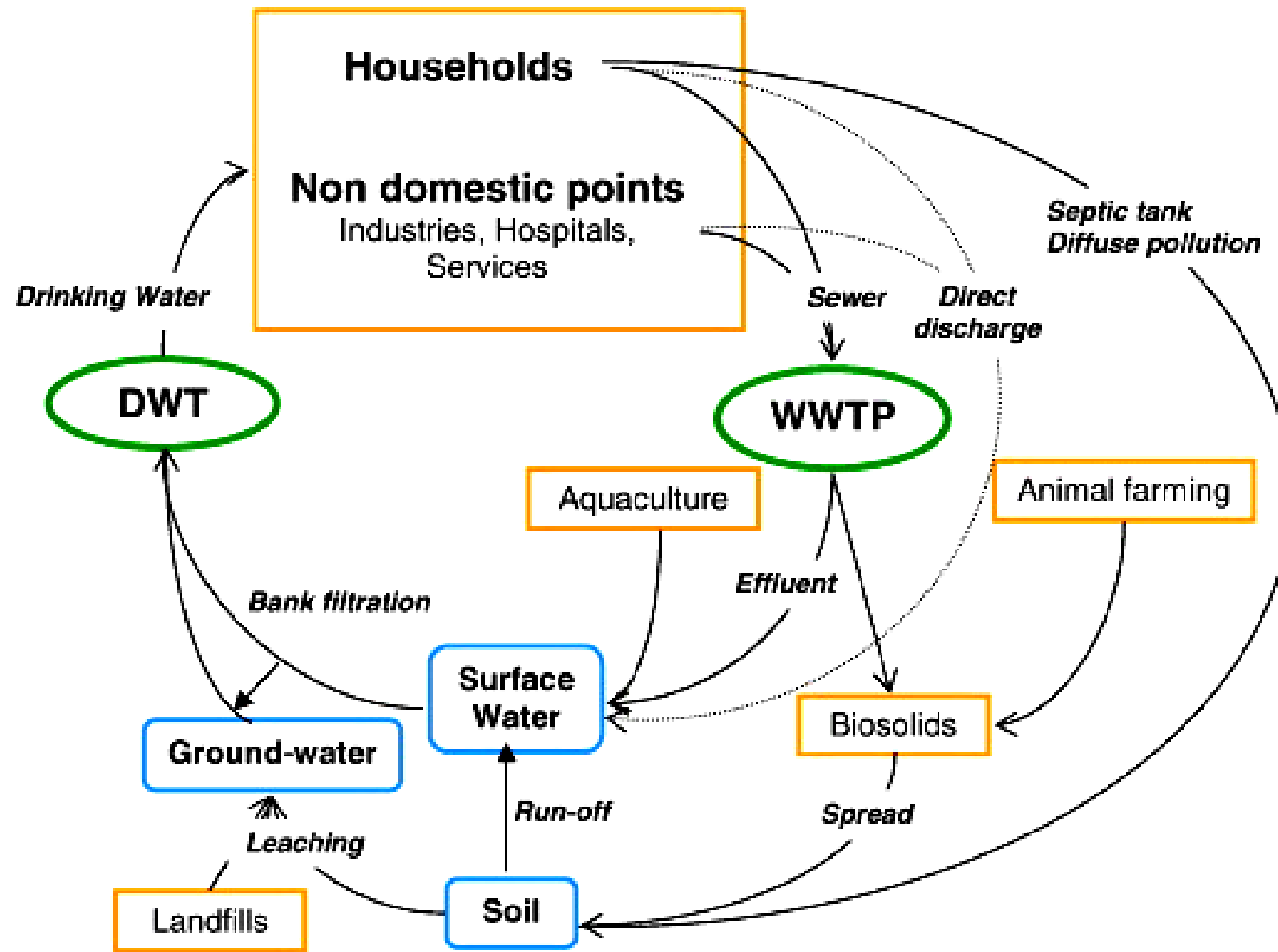
EMERGING POLLUTANTS can be defined as “pollutants currently not included in routine monitoring programmes at the European Level and which may be candidates for future regulation, depending on research on their ecotoxicity, potential health effects, public perception and on monitoring data regarding their occurrence in the various environmental compartments.”

(from the NORMAN Association: http://www.norman-network.net/index_php.php)

- ◆ Algal toxins
- ◆ Antifouling compounds
- ◆ Biocides
- ◆ Complexing agents
- ◆ Detergents
- ◆ Flame retardants
- ◆ Fragrances
- ◆ Plasticizers
- ◆ Personal care products
- ◆ Pesticides
- ◆ **Pharmaceuticals**
- ◆ etc ...

- ◆ Analgesics
- ◆ Antibiotics
- ◆ Antidepressives
- ◆ Anti-inflammatories
- ◆ Antiulcer agents
- ◆ Anxiolytics
- ◆ Cardiotonics
- ◆ Diuretics
- ◆ Lipid regulators
- ◆ Sedative-hypnotics
- ◆ Steroids and hormones
- ◆ etc ...

Pharmaceuticals in the Aquatic Compartment



Pharmaceuticals' Cycle in the Environment
- from Mompelat, S. et al. (2009)

Acknowledgements



Faculty of Pharmacy,
University of Porto



Faculty of Engineering,
University of Porto



Water Institute of the Northern Region



Assoc. Laboratory
Laboratory of Separation
and Reaction Engineering

FCT Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

Portuguese Foundation
for Science and Technology



PhD Grant SFRH/BD/44509/2008



Co-funded by QREN ON.2 – O Novo Norte
NORTE-01-0162-FEDER-000023