

Accepted Manuscript

Management strategies for trace organic chemicals in water – A review of international approaches

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PII: S0045-6535(17)32070-2

DOI: [10.1016/j.chemosphere.2017.12.100](https://doi.org/10.1016/j.chemosphere.2017.12.100)

Reference: CHEM 20481

To appear in: *ECSN*

Received Date: 9 October 2017

Revised Date: 12 December 2017

Accepted Date: 15 December 2017

Please cite this article as: Bieber, S., Snyder, S.A., Dagnino, S., Rauch-Williams, T., Drewes, Jö.E., Management strategies for trace organic chemicals in water – A review of international approaches, *Chemosphere* (2018), doi: 10.1016/j.chemosphere.2017.12.100.

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1 **Management strategies for trace organic chemicals in water – a review of international**
2 **approaches**

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13 **Abstract**

14 To ensure an appropriate management of potential health risks and uncertainties from the release of
15 trace organic chemicals (TOrcs) into the aqueous environment, many countries have evaluated and
16 implemented strategies to manage TOrcs. The aim of this study was to evaluate existing management
17 strategies for TOrcs in different countries to derive and compare underlying core principles and
18 paradigms and to develop suggestions for more holistic management strategies to protect the
19 environment and drinking water supplies from the discharge of undesired TOrcs. The strategies in
20 different industrial countries were summarized and subsequently compared with regards to three
21 particular questions: 1) Do the approaches different countries have implemented manage all or only
22 specific portions of the universe of chemicals; 2) What implementation and compliance strategies are
23 used to manage aquatic and human health risk and what are their pros and cons; and 3) How are site-
24 specific watershed differences being addressed? While management strategies of the different
25 countries target similar TOrcs, the programs differ in several important aspects, including underlying
26 principles, the balance between aquatic or human health protection, implementation methods, and
27 financing mechanisms used to fund regulatory programs.

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30 **Keywords**

31 Chemicals of emerging concern; environmental health; human health; management strategies; trace
32 organic chemicals; water regulations

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