The protection of groundwater and drinking water within the REACH-system

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The REACH-system

Chemicals and uses that fall within the scope of the REACH regulation (1907/2006 EG) have to be registered at ECHA in Helsinki. By doing so, industry guarantees the safe use of chemicals throughout the whole life cycle. Figure 1 shows the standard requirements based on registered volume and hazard properties. However, registrants are obliged to ensure a high level of protection of human health and the environment and provide more data and Information if necessary.

It is common sense to the public and beyond controversy between industry and authorities that groundwater as well as drinking water need the highest level of protection. The conservation of clean drinking water is one the most prominent examples where the precautionary principle in our society should be applied. However, an exposure assessment is not performed in all cases. Currently, the REACH system explicitly requests this only if an hazardous classification applies and the exposure assessment of groundwater and surface water as a source for the indirect exposure "man via the environment" only if a specific classification applies (see Fig. 1).

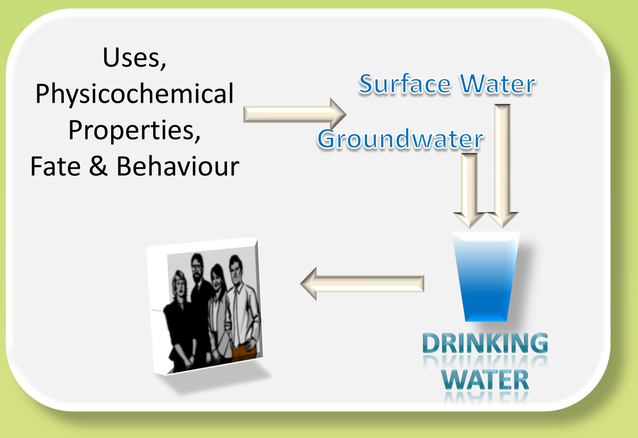

Figure 2: Indirect exposure of humans "man via the environment" in the REACH regulation.

Raw water resources

In Europe drinking water is obtained mainly from groundwater, reservoirs, or rivers by bank filtration. If these environmental compartments are contaminated by chemicals, a contamination of the drinking water itself is possible. As a result society as a whole – and not the polluter – would have to pay for the costs of water treatment. These are often considerably higher than the costs of precautionary action. Thus, there are significant reasons why the protection of groundwater and drinking water demands a sound assessment of the physico-/chemical substance properties and the exposure of the environment in the registration under REACH.

Abstract

The Federal Environment Agency (UBA) views the protection of raw water resources from chemical contamination insufficiently implemented within the REACH regulation and associated guidelines. If here the precautionary principle would not be respected, human health may be at risk. Secondly, society as a whole has to pay for necessary costs of water treatment and not the polluter. Worse off, such techniques are not available in every European region and effectiveness is unproved for many chemical classes. The UBA aims at supporting industry to fulfil their responsibility by providing guidance. We ask to assess those combinations of physico-chemical properties and uses within the REACH system that cause a potential contamination of raw waters. In addition, we see this as criteria to identify substances of very high concern (SVHC) based on article 57 (f) "equivalent concern".

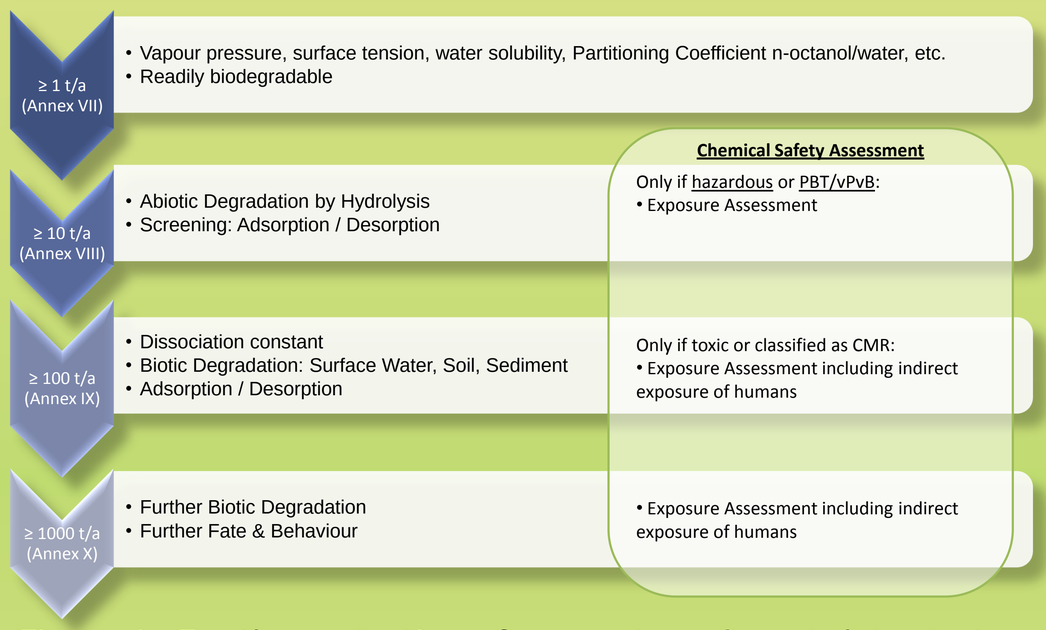

Figure 1: For the protection of raw water relevant data, tests, and assessments based on the registered volume and hazard properties.

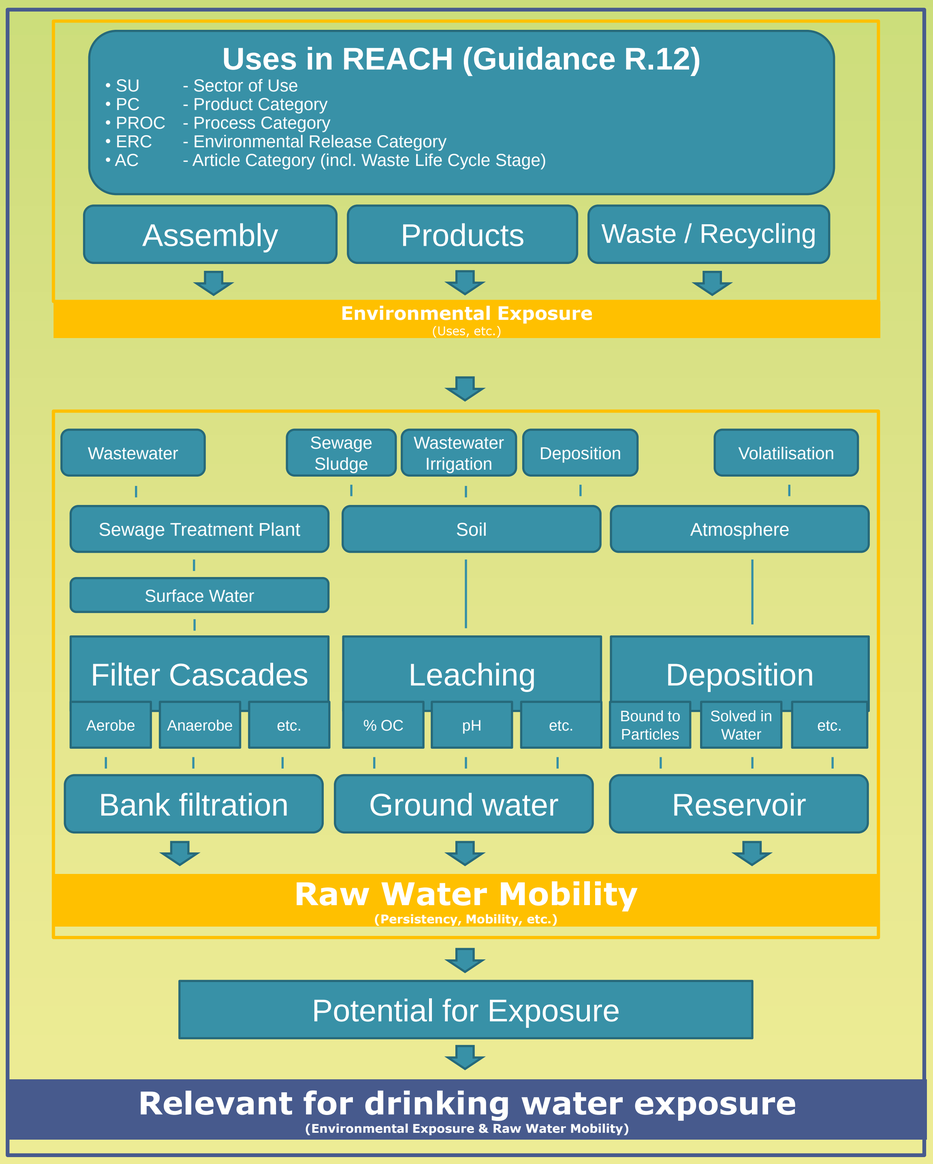

Figure 4: Concept for assessing the potential for raw water exposure by combining environmental exposure assessment based on the uses and raw water mobility based on the physico-chemical properties.

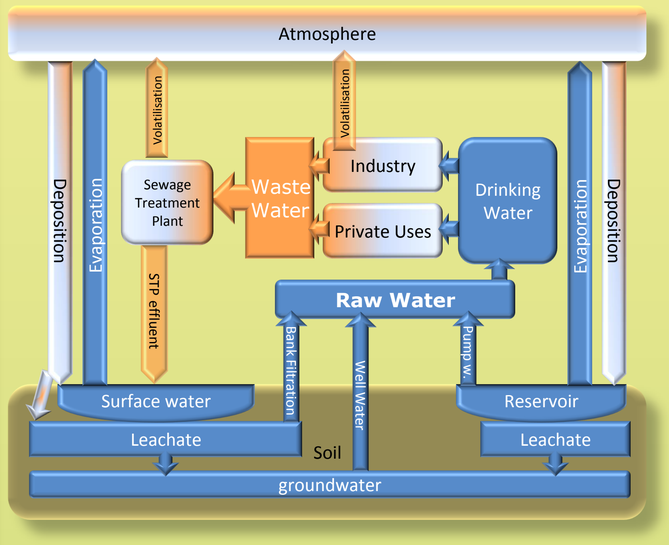

Figure 3: For the protection of raw water relevant water cycle, exposure pathways, and environmental compartments.

Protection of Raw Water Resources

The Federal Environment Agency (UBA) aims at supporting industry to fulfil their responsibility by providing guidance. In addition, we aim at identifying chemicals for which regulatory action may be necessary. For the protection of drinking water we focus on those combinations of physico-chemical properties and uses that cause a potential contamination. In two aligned expert opinions (FKZ 363 01 241 & FKZ 360 01 059) we are currently developing a concept to assess the potential for raw water exposure.

Our aim is to provide registrants and authorities with a screening tool to assess those combinations of physico-chemical properties and uses within the REACH-system that potentially cause a contamination of raw waters. This will allow for establishing risk mitigation measures or for applying regulatory instruments to ensure safe uses of chemicals and hence the precautionary protection of the raw water resources.

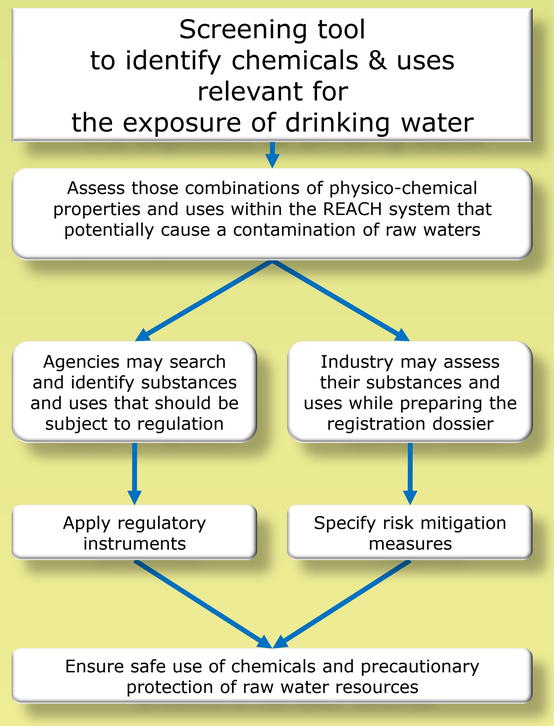

Figure 5: Application and benefit of a screening tool developed by the UBA.

References for further Information
Sachverständigengutachten FKZ 363 01 241 im Auftrag des Umweltbundesamtes "Definition und Bewertung von trinkwasserrelevanten Chemikalien im Rahmen der REACHVerordnung und Empfehlungen zum Screening nach potentiell kritischen Substanzen", Institut für Wasserforschung GmbH Dortmund, Juli 2010
Sachverständigengutachten FKZ 360 01 059 im Auftrag des Umweltbundesamtes "Verfeinerung und Validierung des Screenings nach trinkwasserrelevanten Chemikalien im Geltungsbereich der REACH Verordnung", Institut für Wasserforschung GmbH Dortmund, in Press 2011