4 October 2018

EurEau

Drinking Water Directive
Plenary vote

Summary

EurEau appreciates the work carried out by the ENVI Committee on the Drinking Water Directive. We believe that the outcome of the vote represents a very positive development of the European Commission proposal. Changes such as the new provision to ensure that materials in contact with drinking water are safe and protect public health, a clearer definition of responsibilities when implementing the risk-based approach, as well as the re-introduction of derogations and the indicator parameters, make the Directive more legally sound and easily implementable and should be kept in the final text that will result from the Plenary vote.

Although considerable progress has been achieved, we believe that MEPs could **further improve** the text in Plenary **by adhering to the WHO recommendations for the chemical parameters in Annex I B** as suggested by the Rapporteur.

The Members of the European Parliament should at least be aware of the consequences if they decide to follow the European Commission proposal for **PFAS**, **EDCs** and **Chlorate and Chlorite** over the WHO recommendations: **water bills will increase without additional protection for human health**. **This would hamper the affordability and the sustainability of water services**.

PFAS (Per- and Polyfluoroalkyl Substances)

We believe that the source control approach should be implemented for PFAS in accordance to the relevant EU Regulations on chemicals (REACH, CLP, PIC and POPs Regulations).

We call on MEPs to respect the Treaty on the Functioning of the European Union (art.191.2): PFAS must be controlled (regulated, limited or banned) at the source, before they enter the aquatic environment, in order to protect water resources and ensure a sustainable water management.

With regard to the Drinking Water Directive, WHO recommended the inclusion of PFOS and PFOA in Annex I B with parametric values of 4 µg/l for PFOA and 0,4 µg/l for PFOS. "*Therefore it is recommended to include health-based parametric values for PFOS and PFOA in Annex I Part B which also would provide useful targets for water managers designing treatment*" (page 87 of the WHO report http://ec.europa.eu/environment/water/water-drink/pdf/20171215_EC_project_report_final_corrected.pdf).

Rue du Luxembourg 47-51, 1050 Brussels, Belgium
00 32 (0)2 7064080 – www.eureau.org

These two substances are long-chain PFAS.

We call on MEPs to include in the Annex I B the differentiation between short-chain and long-chain PFAS in order to protect human health while keeping water services sustainable and affordable.

In fact the parameter "PFAS" is much wider, covers numerous substances that pose no risk to human health and the proposed parametric value of 0.1 µg/L is much lower than the parametric values recommended by the WHO for the most toxic representatives PFOA and PFOS.

EurEau suggests to slightly modify the definition of PFAS by narrowing it down, to target substances that pose a risk to human health. In fact the current definition covers over 40 families and subfamilies of PFAS and over 260 individual compounds, including short-chain PFAS, such as TFA (trifluoroacetic acid), that do not present evidence of health risk.

According to the current definition non-toxic and ubiquitous chemicals like TFA will have to comply with the parametric value (0.1 µg/l): TFA is already present in rainwater in concentrations above 0.1 µg/l and its removal is very difficult and costly and would be a significant burden for water supplies.

Water services will have to **treat water through the energy-intensive reverse osmosis all over Europe**, since it is the only technology capable of treating TFA and ensure compliance with the proposed parametric value. **This will in turn entail doubling the costs of water treatment, hampering the affordability and sustainability of water services without providing additional benefits for human health**.

EurEau estimates that reverse osmosis will make the price of water treatment rise by 0.5 € and 1 € per cubic metre. For an average household consuming around 200 m³ per year, **the water bill will increase between 100 € to 200 € per year**.

This means that **the polluter-pays principle will be replaced by the consumer-pays principle**. In fact, these substances should be **controlled or banned at the source**, before entering the water cycle, and **the costs should be borne by the polluters**. As WHO remarks, "*drinking water is not the only source*" of exposure and if these substances are not controlled at the source (at the level of the factory emitting them) citizens will continue to be exposed through other paths (food for instance).

"*WHO is aware that new PFCs are under development but these should be prevented from reaching the environment under other legislation for controlling such ingredients and breakdown products*" (page 88).

If you want to know more about TFA and PFAS read below.

EDCs (Endocrine disrupting compounds)

We **second the Rapporteur's approach to put the three substances in a watch list that would help Member States gathering data within the hazard assessment step (article 8)**.

The WHO, in fact, did not recommend the inclusion of the EDCs in the Annex I B since "*Currently there is no evidence for risks to health from drinking-water, which is a minor source of exposure, and such risks are unlikely*". "*Routine monitoring for the full range of EDCs would currently be difficult, expensive and not effective at preventing contamination of drinking water. It is therefore not recommended to include provision for EDCs in Annex I Part B*" (page 80 and 81 WHO report).

The three EDCs (17-Beta-oestradiol, Nonylphenol, Bisphenol A) that the European Commission included in Annex I B, are proposed by the WHO with 'benchmark values' and not with parametric values to comply with.

"*The purpose of such benchmark values is to determine if the (surface water) source is impacted by treated sewage effluent or other effluents known to contain oestrogenic EDCs. If any of the three substances is detected above the precautionary benchmark value, then these values can be used to verify the efficacy of treatment since all of these EDCs are of low water solubility. If they were not found at these low concentrations* ***at the intake*** then there would be no need to go further; *if they were found,* ***then measurements would be taken post-treatment to show that removal in treatment is adequate***. *If they are found in final water above the precautionary benchmark values there would be a need to optimise or improve treatment*".

This means that the three substances should be removed from Annex I B and placed in a watch list in order to be part of the monitoring schemes carried out by Member States according to art.8. The results should be communicated to water suppliers that will take them into account in the supply risk assessment (according to art.9).

We recommend that Nonylphenol and Bisphenol A are dealt within the requirements on materials and products in contact with drinking water (art.10a - Minimum hygiene requirements).

CHLORATE and CHLORITE

The WHO study confirms the current guideline values of 0.7 mg/L for chlorate and chlorite. "*Drinking-water disinfection with chlorine remains an important barrier to pathogens in many parts of the EU and around the world. WHO has a world-wide remit and considers that the* ***adequate disinfection of drinking-water must never be compromised in meeting guideline values for DBPs and disinfection breakdown products.*** *The concern that chlorate exposure through food is too high needs further investigation and* ***WHO still retains the current guideline value****. The fact that the data from water suppliers, although limited, indicates that with large*

and well-resourced suppliers concentrations rarely exceed 0.3 mg/L, suggests that a lower value may be achievable in the EU – ***for example 0.35 mg/L, approximately half of the WHO guideline value measured as an annual average with a maximum of 0.7 mg/L.*** *This would reduce exposure through both food and drinking-water, while potentially allowing for variation in concentrations and maintaining disinfection. […]*" (page 85-86 of the WHO report).

EurEau calls on MEPs to confirm the maximum WHO proposed value of 0.7 mg/L for chlorate and chlorite. A note should be added to say that Member States**, without compromising the disinfection, should strive for a lower value**, as it is the case with THMs and bromate.

In many Member States water operators would not be able to comply with the 0.25 mg/L value proposed by the Commission without changing completely the water treatment.

In Spain, for instance, water resources (mainly surface water) require the treatment with Chlorine dioxide, due to scarcity and quality problems affecting the resources themselves. In addition, in many facilities the chlorine disinfection phase is followed by ozonation (due to the same quality problems of the source water). Ozone transforms all chlorite into chlorate and the compliance with lower limits than 0.7 is impossible.

Should MEPs confirm the values on 0.25 mg/L, water services will have to change their treatment: this will result in huge investments, that need to be made over a decade, and it will be reflected in a higher water bill for customers.

Other parameters to follow the WHO recommendations

We also think that WHO recommendations should be followed for:

Boron: 2,4 mg/L following the WHO recommendations, instead of the 1 mg/L of the current directive. If you want to know more about Boron, read below.

HAAs: a note should be added in the Annex, specifying that is only relevant if corresponding disinfectants ae used and only for acidic waters.

Microcystin – LR: a note should be added that this parameter needs to be measured only if water originates from or is influences by lake-type water.

Lead: we note that the WHO reiterates the value for lead at 10 µg/l. We think that although difficult, it is possible to reach the 5 µg/l and move to a lead-free society, but 15 years (and not 10) should be granted. Engineering alloys without lead is industrially achievable but will be more expensive. We would like to stress that for a city like Brussels (about 1 million inhabitants), the additional expense resulting from **moving to "lead-free alloys" at the meter only** is estimated to **be around 20 million € over 10 year, so about 2 €/year/inhabitant**. If you want to know more about lead, read below.

More about TFA and PFAS definition

TFA is everywhere: TFA occurs as an atmospheric transformation product upon photo-oxidation of fluorinated hydrocarbons containing trifluoromethyl moieties. Such compounds like 1,1,1,2-tetrafluoroethane or 1,1,1,2,3,3,3-heptafluoropropane are used as refrigerants in air conditioning systems, as gaseous fire suppression agents or as propellants and substitutes of chlorofluorocarbons (CFCs). If formed in the atmosphere, a rapid partitioning of TFA into droplets of clouds, rain and fog will take place. TFA was already measured in rain and snow samples from Switzerland, Germany, Japan, China, the United States, Sweden, Canada, New Zealand, Ireland, Poland, Malawi and Chile, most often with levels higher than the parametric value of 0,1 µg/L proposed for compounds covered by PFAS in the DWD. Because TFA is extremely stable it will enter groundwater and surface waters via precipitation with unchanged concentrations.

What substances are covered by the current definition of PFAS within the DWD?

The DWD refers with its definition to an OECD-Paper titled "Synthesis paper on per- an polyfluorinated chemicals (PFCS)". The terminology defined there reads as follows "PFASs are chemicals that contain one or more perfluorinated moieties R-CnF2n+1. According to literature evaluations this definition covers 42 families and subfamilies of PFASs and at least 268 individual compounds (Buck et. al 2011), including trifluoroacetate (TFA).

What definition would protect human health and make water services remain affordable and sustainable?

It is evident from literature and toxicity studies that the hazard of these substances correlates with the polyfluorinated chain length in the molecule. Short chain lengths are typically not hazardous to human health and longer chain lengths provide increasing toxic effects, mainly due to their increased bioaccumulation potential. PFOA and PFOS have a chain length of eight carbon atoms. Taking this into account, an alternative definition would be more appropriate:

CnF2n+1-R, where "CnF2n+1" defines the length of the perfluoroalkyl chain tail, "n" is >2, and "R" represents the attached charged functional group head, e.g. carboxylic or sulfonic acids. This definition is officially used in the US, for reference see the following fact-sheet developed by the Interstate Technology Regulatory Council:

https://pfas-1.itrcweb.org/wp-content/uploads/2018/03/pfas_fact_sheet_naming_conventions__3_16_18.pdf

More about lead

The WHO study on the evaluation of quality parameters recommends that the current parameter value of 10 µg/l for lead should be retained.

The use of lead is required for engineering reasons in the manufacture of fittings made of metallic materials. As a result of great efforts on the part of industry and the Member States, the use of lead has been reduced to a minimum in recent decades.

Germany, France, the Netherlands and the United Kingdom have developed a common approach for the assessment of hygienic harmlessness in a common initiative since 2007. This includes an assessment basis for metallic materials ("Metallic materials – acceptance of metallic materials used for products in contact with drinking water"; part B – 4MS Common Composition List; (https://www.umweltbundesamt.de/themen/wasser/trinkwasser/trinkwasser-verteilen/anerkennung-harmonisierung-4ms-initiative). The metallic materials listed therein contain between 0.2 % and 3.5 % of lead. The vast majority of the tested and assessed alloys have a lead content of significantly less than 2 %.

With the stipulation of drinking water hygiene requirements in the Drinking Water Directive (Article 10a NEW), uniform criteria applicable throughout Europe can be specified that take into account the Commission's intention to make further arrangements for lead in drinking water, also with a view to precautionary consumer health protection, by specifying parameter values for the migration of substances.

This procedure fits into the general dictum of the Drinking Water Directive, Article 1 "Objective", par. 2, to protect human health from adverse effects of any contamination of water intended for human consumption by ensuring its fitness for human consumption and purity.

A further reduction of the parameter value for lead would restrict the use of modern metallic materials. Even innovative materials, such as the dezincification-resistant material CW 511, contain minute amounts of lead. Despite the fact that some materials are almost lead-free, water in contact with this and other materials would possibly not comply with the reduced parameter value, which would render all the efforts of the last decades in the field of hygienic assessment of the alloys completely useless. Many of the materials classified as "suitable" could no longer be used.

It should also be borne in mind that a further reduction of the lead content in metallic materials could have a significant impact on the corrosion resistance of components.

PVC pipes where lead had been used as a stabiliser are often installed in existing water distribution networks. Such pipes were installed from early 1990 to 2005. PVC pipes installed after 2005 also contain small amounts of lead because of material recycling. Complete exclusion of lead is only possible with new products without recycled material. This means that PVC-U pipelines will contain lead, although in very small quantities, even beyond the transitional period.

More about boron

In light of the latest scientific knowledge WHO recommends a limit value of 2.4 mg / l, higher than the current value 1 mg/l. Apart from cases of water coming from specific geological areas, boron is associated with desalination plants since, unlike Sodium Chloride, it is not completely intercepted by the treatment systems (membranes) currently used, especially in small/medium plants.

There is reason to believe that due to climate changes and the consequent occurrence of more frequent drought phenomena (for example, the year 2017), the use of desalination, especially in the Mediterranean countries, will increase significantly. Compliance with the limit value indicated by WHO (2.4 mg / l) might be compatible with the available technologies and would not call for further and unnecessary additional costs. As a reminder, as far as bottled mineral water is concerned, the European legislation (2003/40 / EC) does not yet set a limit on boron and that for bottled mineral waters some EU countries have limits that may increase to 5 mg / l.