

22 February 2019

Good morning Ms. Vivienne Halleux,

Congratulations to you and to all the legislative team, led by MP Simona BONAFÈ as rapporteur, for your work in advancing the European regulation on water reuse.

The latest development offers considerable expectations for MS in their quest for advancing integrated water resources management using water reuse.

Let me respectfully share with you a series of comments and proposals, so they can be considered by whoever is responsible for the final editing of the legal text.

Most of those comments and proposals relate to the wording of the latest developments on **2018/0169(COD): Minimum requirements for water reuse and the amendments introduced during the first reading at the European Parliament**. There is a final point related to the wording of the **Legislative train schedule on Regulation on minimum requirements for the reuse of wastewater / 2017**.

Great progress has been made on the technical and managerial aspects of the regulation applicable to water reclamation, specifying responsible parties (for reclaiming water, distributing water and storing water), allowing advancements in water reuse for purposes other than agricultural irrigation (industrial, environmental, indirect) and promoting information and outreach campaigns to show the benefits for water sustainability.

Congratulations for the very clear and adequate definitions introduced in Article 3 for “treated waste water”, “reclaimed water”, “reclamation facility” and “(reclaimed) water reuse” as well as the services and operators of the distribution and storage of reclaimed water, with their missions and obligations, together with the previous verification of compliance with Directive 91/271/EEC.

However, some new amendments have been made to the introductory Recitals that introduce **unnecessary inconsistency (and confusion)**, by using plenty of new terms, like in Recital 6 (recovered water, adequately treated water, recycled water) and Recital 7 (insufficiently clean(ed) waste water), Recital 18 (properly treated waste water), and Article 10 2a (properly treated waste water).

“Reclaimed water” should systematically and consistently used, particularly after the section where it has been defined, provided that the meaning of the word is specifically meant to designate precisely that: “reclaimed water”. Amendment 101, sections 2b and 2c (as well as

other subsequent sections) continue unduly talking about “treated waste water”, when in fact they are referring to “reclaimed water”.

Keeping and using this inconsistent terminology can have very profound consequences on public perception and public acceptance of water reuse for agricultural irrigation as well as for other future uses.

Let me say that the correct scientific and technical term is “**substances/compounds of emerging concern**” and as such should be used throughout the legal text.

The compliance criteria established in Article 8, point 3 **is inconsistent** with that established in Table 2, Section 1, Annex I. According to Article 8.3, when the individual value of any parameter exceeds the minimum water quality requirement, the operator of the reclamation facility should suspend the supply of reclaimed water. By contrast, Table 2 of Section 1, Annex I indicates that reclaimed water will be considered in compliance when the limits for *E. coli*, *Legionella spp* and Intestinal nematodes are met in 90 % or more of the samples and none of the values exceed a maximum deviation limit of 1 log unit from the indicated value for *E. coli* and *Legionella* and 100 % of the indicated value for intestinal nematodes.

To the best of my knowledge, one critical aspect for determining compliance of the reclamation process is the clear indication of the number of analytical samples over which the compliance criteria has to be applied. So far, the regulation establishes the minimum monitoring frequencies, but the lack of an explicit indication of the period over which to apply the compliance criteria prevents the unambiguous determination of the samples to be considered. International regulations normally use a criterion like “the last “given number” of consecutive samples collected” or the “samples consecutively collected over a given period of time”. The second requirement, together with the monitoring frequency applicable, serves to identify the samples to be considered for verifying compliance.

This critical aspect of the regulation is equally applicable to validation compliance section. The regulation should established the total number of consecutive samples or the days of operation whose samples should be used to determine validation compliance. That specification is particularly critical, since the validation process has to be performed before the reclamation plant is put into operation, when equipment is upgraded, and when new equipment or processes are added.

It seems that the decision has been made not to include an explicit reference to the sampling period(s) required for compliance, with the ensuing confusion and inconsistency that such decision may bring about. Amendment 112 of Document P8_TA-PROV(2019)0071, indicates that “The samples to be used to verify compliance with the microbiological parameters at the point of compliance shall be taken in accordance with standard EN ISO 19458”. That way, the European regulation delegates into a non-legal European standard the decision about the sampling period to be considered. The justification included for that decision in the Spanish

version (according to my own translation) reads: This amendment incorporates the same ISO standard that the drinking water Directive in relation to sampling of microbiological parameters for verification purposes.

However, the more recent version of the REPORT on the proposal for a Directive of the European Parliament and of the Council on the quality of water intended for human consumption (recast) A8-0288/2018, explicitly includes Amendment 143 for Table 1 where the minimum sampling frequencies “per year” are established to verify compliance. Accessing to ISO 19458 has a cost, it is intended for microbiological investigations and its title does not assure it provides the desired guidance on sampling frequencies or the sampling period to be considered in water reuse. This is the bibliographic reference of that ISO standard. <https://www.iso.org/standard/33845.html>. ISO 19458:2006 provides guidance on planning water sampling regimes, on sampling procedures for microbiological analysis and on transport, handling and storage of samples until analysis begins. ISO 19458:2006 focuses on sampling for microbiological investigations.

Furthermore, the provision of Article 8.3 does not provide the intended protection when applied to most microbiological parameters (*E. coli*, intestinal nematodes, *Salmonella spp*) and even biochemical parameters (like BOD₅), mainly because it takes hours if not days or even weeks to obtain the analytical results. A commonly accepted practice in drinking water provision practice is to react to a lack of a grab sample compliance, by revising and intensifying the water treatment process, while intensifying the frequency of water quality monitoring for a few (legally established) days, until compliance is restored. A similar approach should be adopted in the water reclamation process.

Congratulations for the provision of Article 13 2a allowing the Commission to assess the feasibility to extend the scope of this regulation to other possible uses like industrial, indirect use of “treated waste water” (should be reclaimed water), and aquifer recharge. Annex I, section 1 indicates to Member States that they may use reclaimed water for further uses such as industrial water reuse and amenity-related and environmental purposes.

The requirement indicated in Annex I – section 2 – point 2.1 – point a – paragraph 1 – indent 1, specifying that “None of the maximum values of the samples can exceed the maximum deviation limit...” **is mathematically redundant and even incorrect**. “None of the values” is a sufficient criterion, as the maximum values are already included in that value set.

Finally, let me share with you the absolute need to prevent the use of units that don't belong to **the International System (IS) of units**, as in the final paragraph of the Legislative Train Schedule where it reads: “... from 1.7 billion m³ to 6.6 billion m³ per year...”. That common monetary English unit (the short billion) introduces considerable confusion because it means 1.000 million, when its direct translation into other languages (long billion) takes the meaning of one million of millions. Although than confusion is somehow prevented when writers use

“million m³”, the correct and applicable IS unit is the “hm³” (cubic hectometer). I perfectly understand some persons may not be familiar with those units, particularly those coming from non-traditional metric cultures, but there is no excuse for strictly using the internationally agreed IS of units.

It is strongly recommended that international institutions like the European Union adopt and promote the adoption of the IS of units, as the best way to ensure a reliable and precise communication, particularly in the water sector. I believe it is a great source of confusion and serious error (even a discredit) to ignore the great efforts made by many nations over considerable number of decades to ensure a reliable reporting and communication in science and engineering.

For your convenience, this is link to the Bureau International of Poids et Mesures (<https://www.bipm.org/en/about-us/>) where the history and extent of international collaboration is presented together with very simple protocols on how to use consistently and correctly the International system of units, and the symbols (prefixes) for its multiples and submultiples (<https://www.bipm.org/en/publications/si-brochure/>).

Thank you for your consideration and interest in this matter.

I will be happy to provide to you and the editorial team any additional information they may need.

My best regards to all of you.

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