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Drinking Water Engineering and Science Discussions

Interactive comment on "Prediction of RO/NF membrane rejections of PhACs and organiccompounds: a statistical analysis" *by* V. Yangali-Quintanilla et al.

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We want to thank your thoughtful and thorough reading of our manuscript and for your comments. We are replying to these comments below.

Comment 3) It is true that we have had a limited database that implies that our statistical significance is not robust. However, our database was representative in a degree that could help to demonstrate and confirm statistically previous knowledge on properties affecting membrane rejection.

Comment 4) The membrane was pre-compacted for two hours before starting filtration experiments. In page 7, line 15, the hydrodynamic regime corresponds to different experiments we performed varying J/k (different pressures and fluxes for each mem-

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brane); that means we were referring to a general experimental work. However, it is important to mention that the statistical analysis only corresponds to a unique hydrodynamic regime in terms of J/k=1, as stated in line 21. The NF-90 membrane was operated at a pressure of 420 kPa and a flux of 26 l/m^2.hr. The LE-440 membrane was operated at a pressure of 550 kPa and a flux of 18 l/m^2.hr. Although fouling of membranes was part of our study. We did not include data regarding this issue for the statistical approach. Previous experiments demonstrated that for the concentration used in our experiments steady state was reached. For this case, log Kow (defined at pH 7.4) was appropriate for the group of compounds and the water solution at a pH of 8, in our case the pKa of all our compounds is less than 7; though the ionic species do not dissociate at pH 8 and we can use log Kow. We used log Kow of 2 because previous studies suggested that hydrophobicity/hydrophilicity may be defined by that limit. We acknowledge that hydrophobicity/hydrophilicity is not different of log Kow, that was only a definition for the sake of a simplified classification and subsequent analysis.

Comment 5) and 8) The title may be changed to modeling instead of prediction. The information showed in Table 5 may demonstrate that rejection is membrane dependent showing differences for nanofiltration (NF-90) and reverse osmosis (LE-440). In this particular case MV, dipole and length were better variables for rejection modeling of LE-440. On the other hand, equivalent width and hydrophobicity could model NF-90 rejections. It is true that a large database may bring statistical robustness to our analysis.

Interactive comment on Drink. Water Eng. Sci. Discuss., 1, 21, 2008.