

## ***Interactive comment on “Bio-purification of drinking water by froth flotation” by Ghanim Hassan and Robert Edyvean***

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Indeed 50% removal is not sufficient but remember that Wright brothers started the flying age by a 12 seconds flight. However, I am now starting a research line to raise up this percentage. Merging the three papers means I should submit my Ph.D. thesis as one paper, I think this is not possible. I think there is no need for reference column since the calculations embed both the inlet and downstream streams. I think a few hours does not be considered as “long retention time”. The dead bacteria are very important since they result in turbidity as the same as life and can interfere with the results. Furthermore, removing dead bacteria may remove a potential future nutrient and a source of DBPs. Indeed, Chlorine stimulates biofilm formation in low concentrations as it is referenced clearly in the paper. Removing biofilm by high Chlorine doses is a

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common and famous technique. Nutrient broth is needed to produce a high bacterial content solution which in turn be diluted to adjust the desired CFU/ml. It is familiar and common practice that in order to produce a full mature bacterial broth, you should incubate for 24 hours. Waves were observed by the vision

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1 **Bio-purification of drinking water by froth flotation**  
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8 **Abstract**  
9 Recently, a process was developed for continuous removal of bacteria from water using the  
10 principle of froth flotation through compressed air only without any chemicals (Hassan, 2015).  
11 This work examines the extent to which chemical free froth flotation can purify drinking water.  
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13 The experiments were carried out using two flotation columns with different column heights, each  
14 equipped with ceramic air sparger. Raw water containing bacteria was fed into the column from  
15 the top. Air was pumped through the water enough to produce a froth which separated the bacteria  
16 and, when removed, the bacterial content measured.  
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18 The results show that the bacterial concentration can be reduced by 55% of its original  
19 concentration under the optimal experimental conditions so far found. This suggests that the  
20 technique can be used as a pre-purification step to minimize the use of disinfectants; hence their  
21 byproducts, and to control biofilm growth.  
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**Fig. 1.**