









#### IV. CONCLUSIONS

The removal of aluminum from groundwater was carried out in a continuous fixed-bed column system with variation of the bed depth and flow rate. The results show that the aluminum adsorption through fixed-bed columns depended on the bed depth and flow rate. The change in bed depth extremely influenced the performance of column by decelerating the exhaustion time and enhancing the column quality. The increase in the bed depth and decrease of the flow rate resulted the greatly increase of the total removal percentage of aluminum. However, the increase in flow rate led to accelerate the exhaustion of the column. Accordingly, to obtain optimum performance, suitable parameters are necessary for the column system operation. Therefore information obtained from the fixed bed column study suggested that the natural pumice has potential to be used as adsorbent for treatment of aluminum from groundwater or other polluted waters.

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