

FACULTY OF ENGINEERING

DEPARTMENT OF MINING AND WATER RESOURCES ENGINEERING

FINAL YEAR PROJECT REPORT

**ASSESSING THE EFFECT OF ELECTRODE SEPERATION AND VOLTAGE ON THE
POTENTIAL OF CALICUM AND MAGNESIUM IONS REMOVAL DURING
ELECTROCHEMICAL WATER SOFTENING.**

CASE STUDY; NAGONGERA TORORO

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Science degree in Water Resources Engineering*

ABSTRACT

There are various techniques for removal of water hardness each with its own special advantages and disadvantages. Electrochemical water softening method due to its simplicity has gained a great attention and is used for removal of various ions and other organic matters. The aim of this research work was to investigate the effect of electrode separation on the potential of calcium and magnesium ion removal during electrochemical water softening under different conditions. An electrolytic cell was prepared to remove these ions by electro precipitation. The cell consisted of 1 liter beaker, cathode and an anode. Both the cathode and the anode were made of stainless steel electrodes each of 15.5cm length and a width of 5.5cm

The effect of different operating parameters were investigated and majorly electrode separation and voltage were evaluated.

DECLARATION

I **NABWIRE BRIDGET** declare that the work presented in this project report is as a result of my research and has never been submitted in any institution of higher learning.

Signature.....

Date.....

APPROVAL

This final report on the effect of electrode separation on the Potential of calcium and magnesium ion removal efficiency during electrochemical water softening has been written under the supervision of;

Mr. SSERUMAGA PAUL.

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Co. supervisor;

Mr. MASERUKA BENEDICTO

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Date.....

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May the lord bless you abundantly.

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LIST OF ACRONYMS

WHO	World Health Organization
EC	Electrical Conductivity
NWSC	National Water and Sewerage Corporation
AOAC	Association of Official Analytical Chemists
EDTA	Ethylene diamine tetra-acetate
pH	Potential Hydrogen