



FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF WATER RESOURCES ENGINEERING

A FINAL YEAR PROJECT REPORT

ASSESSING THE EXTENT AND SOURCES OF GROUNDWATER CONTAMINATION:

A CASE STUDY: APAC MUNICIPALITY

BY

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A final year research report submitted to the department of water resources in partial fulfillment for the award of a Bachelor of science in Water Resources Engineering.

Abstract

Groundwater is of major importance in providing main water supply and is extensively exploited for private domestic and industrial use in many urban enters of developing world. At the same time, the subsurface has come to serve as the receptor for much urban and industrial and for solid waste disposal. There are increasing widespread indicators of degradation in the quality and quantity of groundwater, either serious or incipient, caused by excessive exploitation and inadequate pollution control.

The scale and degree of deterioration varies significantly with the susceptibility of local aquifers to exploitation related deterioration and their vulnerability to pollution.

This research is based on the investigation of the situation in a developing town.

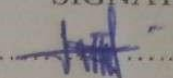
It aims to raise the awareness among policy makers of hydrogeological process in urban areas, to highlight key urban groundwater issues, to provide a framework for the system consideration of the groundwater dimension in urban management and to formulate approaches for management of groundwater resources in urban areas.

DECLARATION

I hereby declare that to the best of my knowledge that this report is my own research and has never been submitted before to any other university or institution of higher learning for academic award. I stand to account for any information contained in this report.

NAME OMARA DANIEL
DATE 9th May 2025

SIGNATURE



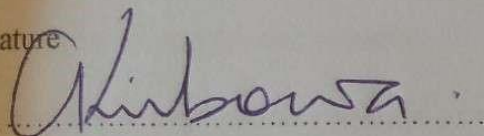
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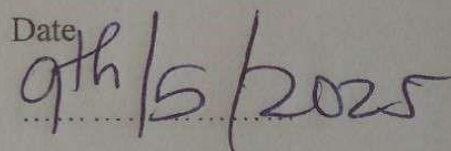
This project report on assessing the extent and sources of groundwater contamination in Apac municipality has been written under the supervision of;

Name: MR. KIMBOWA GEORGE

Signature



Date



APPROVAL

This project report on assessing the extent and sources of groundwater contamination in Apac municipality has been written under the supervision of;

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Signature Date

..... ACKWNOLEDGEMENT

Firstly, I would like to thank the almighty God for keeping me in good health condition granting me this opportunity to undertake this research.

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My sincere appreciation and gratitude go to my supervisor Mr. Kimbowa George for his continuous guidance during this research. His advice and tireless effort in following up the progress of this research is quite instrumental for its success.

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Urbanization has brought opportunities and challenges, with the growth of cities/towns exerting profound effects on the environment. One of the less visible but highly significant consequences of urbanization is groundwater

contamination. Groundwater, a crucial natural resource that provides drinking water to a significant portion of the global population, is increasing threaten by the infiltration of pollutants originating from urban activities. This study aimed to bridge the gap in the extend of groundwater contamination in urban areas. This research delved into the complexities of groundwater contamination in urban areas, exploring its sources, pathways and implications. This study proposed to investigate innovative strategies for mitigating contamination, underscoring the importance of sustainable urban planning and advanced remediation technologies.	10
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