



AN INVESTIGATION INTO GROUND WATER CONTAMINATION IN AGBOR AND
OWA COMMUNITIES IN NIGERIA

Oyem, I.M¹.,
Oyem, H. H².,
Oyem, M. N³.,
Usese, A. I⁴,
Ezeweali D⁵,
and
Obiwulu, E.N.O⁶

^{1, 3, 5, 6}Department of Integrated Science, College of Education, Agbor, Delta State, Nigeria.

²School of Chemistry, Newcastle University, NE1 7RU,

United Kingdom

ABSTRACT

Groundwater is the predominant source of water in Ika land without any treatment with questions on its safety. Fifty borehole water sites were sampled divided into five sample areas. Nitrate contents were determined by colorimetric method, and chloride by titration with silver nitrate solution (APHA standard method 4500-Cl-B). From the results obtained, chloride values were consistently low in all the sampled areas. Secondly, very low nitrate values were similarly recorded in the sample areas. Thirdly, a mean value of NO₃⁻/Cl⁻ ratio of 0.003 was observed, an indication of groundwater geochemical evolution. However, both the chloride and nitrate contents of the groundwater fell very far below international guideline values. Microbial analyses reveal that all but one sampled area posted negative results for the presence of E.coli, Salmonella spp. was not detected. It is obvious that the groundwater quality is wholesome with regards to the parameters here analyzed. However, personal hygiene is advised.

Keywords: Ground water, chloride, nitrate, E.coli, and Salmonella spp.