

ONLINE CONFERENCE



NIGERIAN ASSOCIATION FOR ENGINEERING GEOLOGY AND THE ENVIRONMENT (NAEGE)



**ANNUAL INTERNATIONAL
CONFERENCE IBADAN 2020**

7th - 8th September, 2020.

Theme:

**ENVIRONMENTAL AND ENGINEERING GEOLOGY AS INVALUABLE
TOOL FOR SUSTAINABLE INFRASTRUCTURAL DEVELOPMENT**

↓ VENUE ↓

GOOGLE MEET f NAEGENigeria

**Conference Programme
AND
Book of Abstracts**

Acknowledgment

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and Honourary Members of the
Nigerian Association for Engineering Geology and the Environment
and all who have contributed in every way
to the success of this event.

08/09/20
Tue.,

OPENING REMARKS		10:10 - 10:30AM	
PLENARY SESSION 2 (A)		10:10 - 10:30AM	
LP3	Rock Mass Characterization for Underground Construction PROF. T.K.S. ABAM	10:10 - 10:30am	1
TECHNICAL SESSION 2 (A)		10:31AM - 11:30AM	
A05	Hydrogeology and Groundwater Potential of Dutsen Wai Kaduna, North Central Nigeria MICHAELS, P.S., DANIEL, A.S. AND ZINGCHANG, A.H.	10:31 - 10:40am	5
A06	Geological Evaluation of a Site for Sanitary Landfill in Asaba, Southern Nigeria KOMOLAFE, N.P.	10:41 - 10:50am	5
A07	Gully Erosion in Rafingora, North Central Nigeria: Role of Geology and Soil Properties MUHAMMED, O.N. AND IDRIS-NDA, A.	10:51- 11:00am	6
A08	Evaluating Erodibility Potential and Gully Intensity of some Gully Slopes in Ezimo and Onuiyi Areas of Enugu State Using Limit Equilibrium Simulations EZE, A.A., IGWE, O. AND ONWUKA, S.	11:01 - 11:10am	6
B04	Preliminary Geological Assessment of Dugbe-Osin Area for Earth Dam Construction, Irepodun, Kwara State, North-Central Nigeria IBRAHIM, O.I.	11:11 - 11:20am	10
B05	Evaluating the MDD and OMC of Remolded Cohesive Materials from some North-Eastern Nigerian Lithoseismic Layers UGWOKE, T.A. AND IGWE, O.	11:21 - 11:30am	11

[A07]

Gully Erosion in Rafingora, North Central Nigeria: Role of Geology and Soil Properties

Muhammed, O.N. and Idris-Nda, A.

School of Physical Science, Geology Department,
Federal University of Technology, Minna, Nigeria.

Corresponding E-mail: glad2deen@gmail.com

Abstract

Geological and geotechnical study of gully erosion was carried out in Rafingora, northern part of Bida basin to determine the lithologies of the area and assess the influence of geotechnical properties of the soil on the gully erosion. Field study across the gully profiles revealed 3 lithologies of highly erodible massive reddish sandstone underlain by light brownish clastic supported sandstone with cross bedding and herring-bone as structural imprint, underlain by light greyish mudstone of high resistance to gully influence. Results of the sieve analysis indicated that the soils in the area are poorly graded with average coefficient of uniformity C_u of 4.61 and coefficient of curvature C_c ranged between 0.4 - 2.54 indicating that the soils are poorly graded and susceptible to erosion. The soil in the area possess an average low Plastic index (19.52), Optimum Moisture Content (8.3), Maximum Dry Density (1.98), low values (22° and 18.9max) of AIF and cohesion and as well moderate

[A08]

Evaluating Erodibility Potential and Gully Intensity of some Gully Slopes in Ezimo and Onuiyi Areas of Enugu State Using Limit Equilibrium Simulations

Eze, A.A.¹, Igwe, O.¹ and Onwuka, S.²

¹Engineering and Environmental Unit, Geology Department, University of Nigeria, Nsukka, Nigeria.

²Hydrology Unit, Geology Department, University of Nigeria, Nsukka, Nigeria.

Corresponding E-mail:

amarachukwu.eze.pg87411@unn.edu.ng

Abstract

Erodibility and gully intensity of a soil is a function of the stability of gully slopes which is highly dependent on its geotechnical properties. This work comprises of detailed mapping of 50 gully slopes, geotechnical assessment of 14 samples, and stability analysis of the studied slopes. All geotechnical analysis followed the American Society for Testing and Materials (ASTM) applicable procedures. The laboratory results were analyzed using stability models carried out with the GeoStudio® software suite. Evidence has shown that the study areas experience scouring and slumping of gully walls. The geotechnical result revealed that the gully slopes are predominated by sand. Ezimo and Onuiyi erodible soils comprise of non-plastic silt and low to medium plastic clays respectively. Although soils in Onuiyi displayed better geotechnical properties than Ezimo, both soils are poorly compacted