

# GEOTECHNICAL CHARACTERISTICS OF SOME BORROW PITS AROUND AFE BABALOLA UNIVERSITY, ADO-EKITI, SOUTH-WESTERN NIGERIA.

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## Abstract

This research work has analyzed the geotechnical characteristics of two borrow pits around Afe babalola university. The research work was carried out by collection of soil samples from borrowpit 1 (beside Federal polytechnic, Ado-Ekiti, Nigeria) and borrowpit 2 (along Afe Babalola farm, Ado-Ekiti, Nigeria) and taken to the laboratory for soil test. The particle size analysis shows that the percentages passing number 200 British Standard sieve are 22.18% and 13.02% for borrowpits 1 and 2 respectively. Atterberg limit results show that borrow pit 2 has sandy particle sizes predominating. Hence the soil sample as a result of its particle size composition happens to be a cohesionless soil with no plasticity while pit 1 has liquid limit of 32.5%, plastic limit of 27.77%, plasticity index of 5% and shrinkage limit of 5.8%. The natural moisture content for the soil samples are 5% and 9.7% for borrowpit 1 and borrowpit 2 respectively. The specific gravity for borrowpit 1 and borrowpit 2 are 2.67 and 2.60 respectively. The soaked CBR value for the soil samples are 70% and 66%. The maximum dry density for the soil samples are 1.82Mg/m<sup>3</sup> and 2.0Mg/m<sup>3</sup> for borrowpit 1 and borrowpit 2 respectively. While that of Optimum moisture content are 16.24% and 13.5% for borrowpit 1 and borrowpit 2 respectively. The unconfined compressive strength (qu) for borrowpit 1 soil sample is 91.5kN/m<sup>2</sup>. The unconfined compressive strength of borrowpit 2 could not be obtained as it is a sandy material. Hence borrowpit 1 can be classified as A-2-4 material (silty or clayey gravel and sand) while borrowpit 2 can be classified as A-3 material (fine sand).

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