Geological basis for the performance of Minna-Zungeru Road, North-Central Nigeria

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Geological, groundwater inventory and geophysical studies were employed with the view of understanding the geologic basis for the performance of Minna-Zungeru road. Rocks underlying the road include granites, migmatite-gneiss and metesediment (schist). Vertical Electrical Sounding VES ranges from 34.9 Ω-m and 81.6 Ω-m in the unstable portions mostly underlain by schist, and 149 Ω-m to 429 Ω-m in the stable portions underlain by granite and gneiss. These low resistivity recorded within the schist are associated with soils characterized by medium to high plasticity such as sandy clays and clayey soils of poor engineering properties. Lower percentages of groundwater variation were recorded within the portion of the road underlain by schist. The clayey nature of the soils underlain by the schist makes the soils behave like aquitards. The treatment of the soils to improve their engineering properties, replacement of the soils with soils having better engineering properties as well as the provision of proper drainage for the road will improve the performance of the road,

Key words: Resistivity, engineering, rocks, unstable