

Abstract Submitted
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Subaqueous modelling of open sand mining pit to determine its environmental effects to surrounding infrastructures. EDMUND ATAKPO, Delta State University, Abraka, MAY RUKEVWE IMONIKOSAYE, Nigerian Building and Road Research Institute, Ota, Nigeria, JUDE OMORIWHOVO, GODFREY AKPOJOTOR, Delta State University, Abraka, Nigeria — The sand deposits which are important industrial and local raw material with a wide application are currently mined in many parts of the world through large, unregulated and haphazardly located excavation sites. In this study, we have identify the hazardous effects of excavation sites on their surrounding infrastructures such as roads and buildings. Depth meters and the Global Positioning System (GPS) were used to determine the subaqueous hydrography of the water filled borrow pit and ascertain the depth, shape and side slopes of the dredged area from where sand is being scooped. Geoelectric sounding was also conducted to study the subsurface integrity around the excavation site. The results were analysed using resistivity inversion software and Surface Terrain modeling software established the geoelectric/geological layers generally within the area. The 3D model showed that the depths of the pit from which material is being scooped in the dredging operation ranges from 12.5m to 30 m. The environmental effects of this dredging operation to the surrounding infrastructures are discussed. We then delineate the criteria for locating excavation sites with regards to infrastructures.

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