6. CONCLUSION

Major concern for quantity and quality groundwater has prompted investigation of the pattern of groundwater movement in the study area. The results of the hydrogeologic measurements and aquifer characteristics from geophysical data showed that groundwater within the study area flows from the centre, western and southeastern regions to the southwestern and northeastern parts of the area. These groundwater converging centres are high groundwater potential zones viable for groundwater development with high yield. Two types of aquifers, which are the weathered layer aquifer and weathered/fractured (unconfined) aquifer were delineated. This is in agreement with the geology of the area that groundwater is contained within the weathered and or fractured/jointed basement columns which shows the unconfined nature of the aquifer system. The transmissivity of the aquifers ranges from 2.88 – 437.4 m^2/day and the hydraulic conductivity of the aquifers ranges from 1.2 – 40.5 m/day. The transmissivity values indicate that heavy pumping can be maintained in the area, as the aquifer can regain water within a short period of time. A water scheme to provide potable water for the people of the area is therefore proposed at these groundwater converging centres. This study displayed the applicability of geoelectric sounding in determining groundwater flow pattern in areas where there are little or no well from where hydrogeologic measurement could be made due to the correlation between their results. It is recommended that dumpsites should be placed within the southern parts of the area in order to minimize groundwater contamination. Also, regular monitoring of groundwater sources in the area should be carried out to prevent contamination of groundwater flow.

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