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Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2013_BJAST_7798
Title of the Manuscript:	Delineating Aquifer Systems Using Dar Zarouk Parameters Determined From Surface Geoelectric Survey: Case Study of Okigwe District, Southeastern Nigeria
Type of the Article	Original Research Article

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	Line 8 to line 9, capitalize each word e.g Vertical Electrical Soundings not vertical electrical soundings because VES is a keyword. Line 21 to line 22, False bedded sandstone is of old literature, please kindly help the younger Earth scientists to know the Formation you are referring to, because a type-locality has been assigned to False bedded sandstone. Line 23, Please give the full meaning of L.G.As and subsequently put LGA in bracket e.g (LGA). Then LGA without bracket can be cited later in the manuscript. Line 23, The Bende-Ameki not Bende Ameki Line 25 The False bedded sandstone? Line 39 Do you mean portable or potable? Line 54, formation should be Formation Line 79 (Ekine et al., 2006). Not seen in your References Line 161, Onyeagocha not Onyeaguocha Line 163 formation? Line 165, Not Ameki Formation but Bende-Ameki Formation Line 222, Equation 11 is wrong and cannot be used in deriving parameters 7 to 15 of Table 3 as stated. Table 3 column 2, recalculate your values under AVUTU Line 232 capitalize each word e.g Vertical Electrical Soundings not vertical electrical soundings because VES is a keyword Line 235 to 236, non polarizable should be non-polarizable Line 238, Insert a schematic diagram of the Schlumberger array used in the data acquisition. Line 249 to 250, The survey revealed a multilayered earth. There is variation in resistivity with depth. Rephrase "The survey revealed that the study area is multi-layered exhibiting variation in resistivity with depth". Line 252 modeled or modelled? Refer to line 158 gravelly; also line 442 in Fig 5 Modelled. Note: You either choose American English or British, the two are	This has been corrected. This has been corrected The False bedded sandstone has been replaced with Ajali sandstone This has been corrected. This has been corrected. Changed to Ajali sandstone Potable has been corrected. This has been corrected. The reference is deleted This has been corrected. This has been corrected. This has been corrected This is corrected. This has been corrected.



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	not usually acceptable in same manuscript. Line 283, while the specific capacity is fairly uniform with magnitude of about 877. Express your statement well and also add the required unit. Line 297 to 298, The relatively lower resistivity value recorded at Okwuoma (VES 81) could be linked to Abadaba lake and that recorded at VES 95 to the presence of Onuinyi River. “The resistivity of VES 95 was not recorded in any Figure or Table. Also based on your statement of line 297 to 298 linking lower resistivity to nearby river, justify why the resistivity of VES 91(370ohm-metre/7590370ohm-metre) is lower than VES 81(1010ohm-metre/24100370ohm-metre) as shown in Fig 8. Since VES 91 is sited far away from Onuinyi River as shown in Fig 1. Line 396, Parts of Fig. 4 is incomplete (litholog) 522 (iii). The False bedded sandstone? Old literature Line 522 to 526 (iii). The False bedded sandstone aquifer (Zone D) covers the Northeastern part of the study area in Okigwe L.G.A.? (Zone D) cannot be in the Northeastern part of the study area based on Fig 10. Line 528 to 530, Each zone is fairly homogenous in terms of geologic setting, hydraulic properties and water quality. This observation suggests possible variation in water quality across the area? Rephrase this statement because you have not done anything on water quality, my suggestion is “Each zone is fairly homogenous in terms of geologic setting, hydraulic properties and possibly water quality. This is because Niwas and Singhal (1981) showed that..... Also rephrase Line 536 to 537 as suggested “On the bases of longitudinal conductance and possible groundwater divides, four zones are identified using the corresponding locations of K_o product values (Fig. 10).” Line 678, change Onyeaguocha to Onyeagocha, Petrogrphy to Petrography	The sentence has been rephrased. Modelled has been used. The statement has been rephrased and the required unit added. All the 120 VES stations covered in the study were not reflected in the Table. VES 95 is one of such. The lower resistivity VES 91 has over VES 81 could be linked to the nature of the depositional environment. The figure was redrawn to reflect the reviewer’s comment. All other corrections pointed out between line 522 to 526 have been effected. The location of Zone D has been changed to Northwestern The statement has been rephrased with the Reviewer’s suggestion taken Reviewer’s suggestion is taken. The correction has been effected.
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Minor REVISION comments	Line 227 to 229, Notice the close agreement between parameters 2 and 15 for Madonna II Ihitte Uboma which attests to the reliability of VES results. Explain the reason for the great disparity in the rest and why use only one result to draw a conclusion amongst others. Line 233 electrodes or electrode? Verify Line 237, freshly charged 12V dc supply was used to supply current. Please rephrase this sentence. Line 522 to 526 (iii). The False bedded sandstone aquifer (Zone D) covers the Northeastern part of the study area in Okigwe L.G.A. This area falls within the Ajali Formation (False bedded sandstones) and underlain by Mamu Formation. The clay and shale members of this Formation are thick which makes ground water exploitation difficult (IWADA, 2002). Water is available through cracks and fissures. Based on the above statement from line 522 to 526, with the introduction of names of some Formation, I think it could be better to insert a Table showing the lithological succession of Formation in the area. Line 536 to 544, On the bases of longitudinal conductance, VES 116 should be grouped into Zone A not Zone B, and VES 14, 16 and 18 should be grouped into upper Zone B not Zone C, also VES 60 and 61 should have been grouped into lower Zone A not Zone B. Groundwater divides do not necessarily correspond with surface water divide though they may or not be in constant interaction. So justify your choice of line of division. Please recall that the topic is 'Delineating Aquifer Systems Using Dar Zarouk Parameters Determined From Surface Geoelectric Survey', not 'Surface Water Divide'	This has been rephrased in line with reviewer's comment It has been changed to electrode The sentence has been rephrased It has been rephrased in line with reviewer's suggestion. The rephrasing of the sentence has taken care of the need for inserting Table that shows the lithological succession of the Formation of the area. The figure has been corrected and the sentence rephrased to take care of the reviewer's argument. It has been rephrased
Optional/General comments	The abstract is okay, except minor corrections. GEOLOGY OF THE STUDY AREA and THEORETICAL BASIS OF THE STUDY should be grouped under LITERATURE REVIEW except the journal guidelines states otherwise. FIELD MEASUREMENT PROCEDURE should also be grouped under DATA ACQUISITION while RESULTS and DISCUSSION OF RESULTS should be grouped under RESULTS AND DISCUSSION.	The corrections in the Abstract have been made. The Reviewer' suggestion was taken. The Field Measurement Procedure is grouped under Material and Methods according to the



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	The CONCLUSION is poor and should be totally revised. This work seems to be an old work, and should be regarded as an original research paper if it's coming from an old hand in the field who have decided to publish his archived works. Please verify, if not originality is in doubt. Then should be treated as a review paper, collative research paper or others for the young fellow but not original research paper.	Journal requirement The suggestion has been taken. The work is original born out of Ph.D research that has been in progress for the past five years.
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