

Accompanying drilling with additional investigation: A successful case history in Eritrea

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Lack of potable water is among the crucial problems in developing countries, especially in arid to semi arid regions, like Eritrea. In such cases groundwater is the best if not the only resource to be looked for to alleviate the problem. A Norwegian Church Aid funded groundwater development project was implemented by Southern Zone Administration of Eritrea for ten villages dispersedly located in Southern Zone of Eritrea, which are with long history of water source problems and failed attempts. Among the earlier trials to assuage the problem in the villages, 14 failed groundwater development attempts and resettlement recommendations can be mentioned. Despite this, a project, encompassing, ground water investigation, drilling, pump testing and pump installation, and succeeded 100% with borehole success rate of 82%. Among the main reasons for the success is the follow up of the drilling work by the site selector and the additional hydrogeological and geophysical works done based on the drilling results along the drilling work. As drilling test boreholes is not financially astute in Eritrea, further hydrogeological and geophysical investigations accompanied the drilling work incorporating the new ideas developed about the subsurface environment from drilling results. Consequently, 14 successful boreholes out of 17 drillings solved the water source problems of the villages, fully granting access to 7,270 people in 1,841 households with clean potable-water. Thus, performing additional investigation alongside drilling is time and cost effective, increases success-rate and enriches hydrogeological understanding of the groundwater investigating professionals making them more realistic for future works.

Biography

Ketema Ghebremeskel Mahari, 33, is Eritrean Geologist working as consultant in Eritrea. He graduated in Geology from Asmara University in 2002. Mr. Ketema has actively worked in different phases of turnkey water supply projects. He has worked in more than 150 projects and prepared more than 100 different size technical reports. He was formerly working in Universal Water Consultants holding different positions and founded Summit Geological Consultants and Water Development experts in 2009 and has diversified the services of the firm to provide pertinent services in Hydrogeology, Geophysics, Geotechnical and other related services partnering with local and international firms and professionals.

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