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# **PROPOSAL FOR PROVIDING POTABLE WATER REQUIREMENTS OF EMPLOYE'S HOUSING COMPLEX OF PUTTALAM COAL POWER PROJECT**

**Master of Science Dissertation**



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**October 2011**

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**PROPOSAL FOR PROVIDING POTABLE WATER  
REQUIREMENTS OF EMPLOYEE'S HOUSING  
COMPLEX OF PUTTALAM COAL POWER PROJECT  
TITLE OF THE PROJECT**

A dissertation submitted to the  
Department of Electrical Engineering, University of Moratuwa  
in partial fulfilment of the requirements for the



Degree of Master of Science, Sri Lanka.  
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**ABEYKOON BASSNAYAKE MUDIYANSELAGE  
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**October 2011**

## DECLARATION

I hereby declare that the work submitted in this dissertation is the result of my own investigation, except where otherwise stated.

It has also not already been accepted for any degree, and is also not being concurrently submitted for any other degree.



Eng. A.B.M.T. ABEYKOON,

Date: 09 November, 2011



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## **ABSTRACT**

This thesis discusses the study of ground water availability at Karamba in Kalpitiya peninsula and hence supply of potable water requirement to the Employer's Housing Compound (EHC) rather than implementing Reverse Osmosis (RO) system.

The specific objectives are,

1. To find out the reliable water source.
2. To supply sufficient and quality water in accordance with the Sri Lankan regulations.
3. How to use earth resistivity theory to predict the availability of ground water.
4. To analysis cost effectiveness ground water usage compared to RO modules.
5. To establish the reliable water supply net work to fulfill demand.



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The content in Chapter 2 provide the reader with the ground water aquifers in Sri Lanka and geomorphological and hydrogeological distribution patterns mapped for different types of aquifers.

The information presented in Chapter 3, describes the fundamentals of the image survey to measure the earth resistivity and made various decision on geological parameters such as the mineral and fluid content, porosity and degree of water saturation in the rock. Actually, Electrical resistivity surveys have been used for many decades in hydrogeological, mining and geotechnical investigations.

As human increases, fresh water demand tended to increase too. The world's water consumption rate is doubling every 20 years. Then, RO process, water is made to pass from the more concentrated one, which is the reverse of the principle of osmosis is used as new technology in the world but more energy consumed with more capital cost. Chapter 4, 5, 6 & 7 will discuss in more details about RO plants, pump selection, piping and costs analysis. Chapter 8 will explain the conclusion and future needs.



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