A Major Project Report On

GROUND WATER EXPLORATION USING GREY WOLF OPTIMIZER

Submitted in partial fulfilment of the requirements

for the award of the degree of

MASTER OF TECHNOLOGY

IN

SOFTWARE ENGINEERING

By

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DELHI TECHNOLOGICAL UNIVERSITY

CERTIFICATE

This is to certify that the project report entitled **GROUND WATER EXPLORATION USING GREY WOLF OPTIMIZER** is a bonafide record of work carried out by **Rahul Dadeia** (2K13/SWE/24) under my guidance and supervision, during the academic session 2013-2015 in partial fulfilment of the requirement for the degree of Master of Technology in Software Engineering from Delhi Technological University, Delhi.

To the best of my knowledge, the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any Degree or Diploma.

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ABSTRACT

Water is one of the Mankind's most vital resources. An adequate supply of water is one of the pre-requisites for development and industrial growth. In areas where surface water is not available, Groundwater constitutes significant part of active fresh water resources of the world and is obviously dependable source for all the needs. The stress on water resources started due to exploding irrigation, domestic and industrial demands. The finite water resources are being explored to quench the thirst of millions of the populace. In a developing country like India, the minimum daily requirement of a person is 200 litres for domestic use, while an equal or large amount will be needed for other purposes. It is estimated that out of the total of 1122 billion cubic meters of water utilized in India annually, 430 billion cubic meters is met from surface sources and the rest is met from ground water resources. Groundwater is located beneath the ground surface which is precious natural resources. Geoscientist had to know the location of groundwater for extraction of water. Thus we have applied Grey Wolf Optimizer in the exploration of groundwater in various regions. Experts provided us with values of attributes; soil, lineament and other geology features and our algorithm detected the presence of groundwater in particular region. Hence we have evaluated different attribute values of these characteristics as case base and then detected the presence of groundwater of new cases depending on the previous values of our cases.