National symposium on "Climate change and water resources in India"
Organised by : Indian Association of Hydrologists, 18-19 Nov. 2009, Roorkee

87

APPLICATION OF RS & GIS TECHNIQUES IN ARTIFICIAL RECHARGE

Sampath Kumar M.C
Asst. Prof., Civil Engineering
B.M.S. College of Engineering
Bangalore 560019.
Email: sampathmc61@gmail.com

Dr. N. Balasubramanya
Professor, Civil Engineering
MS Ramaiah Institute of Technology
Bangalore 560 054
Email: jhrumbaa@gmail.com.

ABSTRACT

This paper describes the studies conducted on the artificial recharge of ground water with reusable waste water. The present investigation has been facilitated by the application of Remote Sensing and GIS techniques. The study area geographically is the Devanahalli Taluq in Bangalore District which comes under the South Pennar watershed with an area of 2136 sq. km. The results of the ground water estimation reveal that there is a continuous depletion of the ground water table in the last decade, in the range of 6.0 M. to 7.7 M. This has been substantiated by the analysis of generated thematic maps w.r.t. geo-morphology, geology, drainage and ground water prospects. Scientific investigations have been carried out to replenish the depleted ground water by artificial recharge with reusable waste water. In the present study possibility of using treated effluent from tertiary treatment plant treating municipal waste water has been explored. Qualitative Analysis has been conducted to assess the quality of the recharge water. Mechanism of infiltration on quality of recharge water has been assessed by column studies using short and long columns with depths of 1.55 M. and 24.5 M. respectively. Results of the column studies and analysis have highlighted bright prospects for ground water recharge. Based on these studies suitable ground water recharge points have been suggested.