

**A PROJECT REPORT
ON
“ASSESSMENT OF GROUND WATER QUALITY AT SELECTED
LOCATIONS IN RAMANAGARAM”
(SPONSORED BY KSCST)**

**Submitted
to**

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM
In partial fulfillment of the requirement for the degree of**



**BACHELOR OF ENGINEERING IN
CIVIL ENGINEERING**

Submitted by:

**BASAVARAJU.A
(1GC07CV008)
NANDAN RAO KAMBLE.S
(1GC07CV038)**

**CHAITRASHREE
(1GC07CV009)
NANDINI.S.R
(1GC07CV039)**

GUIDE

**UMME HAMIDA
LECTURER**



**DEPARTMENT OF CIVIL ENGINEERING
GHOUSIA COLLEGE OF ENGINEERING
RAMANAGARAM-562159**

ABSTRACT

Water is a precious and most commonly used resource. It is one of the basic requirements of human beings. Water is available as surface and ground water. Ground water is the water which occurs below the surface of the Earth. As the surface water resources, being exploited over the time it may become short of supply or may not be easily available at site. Ground water commonly occurs and is widely distributed. There has been an increase in ground water development and utilization particularly for agriculture, industry and urban and rural water supply scheme. Most ground water contains no suspended particles and practically no bacteria or organic matter. It is usually clear and odorless. Therefore ground water is normally more hygienic, although ordinarily it contains more dissolved minerals than surface water. Some of these dissolved minerals are essential for good health, if there are in abundance may cause taste or odor problem. The sampling was done from February to April 2011. 36 bore well water samples were collected from 12 areas of Ramanagaram town. Water quality parameter of the bore well water samples was determined as per standard methods. Ramanagaram is approximately 50km southwest of Bangalore. It is average elevation of 747m. Ramanagaram is also famous for the huge rocky outcrops. For the present project work, Ramanagaram city public bore wells were selected for the assessment of ground water quality. The principle drinking water source for the people of Ramanagaram city is municipal water lines and public bore wells. The samples were analyzed for the following chemical parameters- pH, Total Dissolved Solids, Total Alkalinity, Phenolphthalein Alkalinity, Total Hardness, Chlorides, Calcium, Magnesium and bacteriological parameter. Total dissolved solids content of bore well water samples in the study area ranges from 340 mg/l to 2700 mg/l, with the mean value of 1520 mg/l. Total alkalinity values for the bore well water samples in the study area ranges from 20 mg/l to 56.67 mg/l as CaCO_3 , with a mean value of 38.335 mg/l. Total hardness value is generally termed as CaCO_3 . The hardness of bore well water samples in the study area ranges from 57.67mg/l to 167.34mg/l, with the mean value of 112.50 mg/l. The lowest calcium value is 8.14 mg/l, while highest value is 40.64 mg/l with a mean value of 24.40 mg/l. The desirable limit of magnesium in natural water is 30mg/l and maximum permissible limit is 100 mg/l (BIS 1991). The concentration of chlorides in the study area bore well water samples ranges from 106.2 mg/l to 250.07mg/l, with the mean value of 178.135 mg/l.

The turbidity in the study area borewell water samples ranges from 0.20 NTU to 1.17 NTU, with the mean value 0.685 NTU. pH is 7.0 to 7.5 with the mean value of 7.25. Acidity in the study area of the borewell water sample ranging from 13.67mg/l to 109.34mg/l, with the mean value 61.50mg/l. The study area showed the Dissolved oxygen varying from 5.47mg/l to 7.27mg/l, with the mean value of 6.37mg/l. Temperature varying from 18.3 to 23.6 °C, with the mean value of 20.95 °C. Ground water quality details when calculated showed that the water is of good quality.