CHAPTER –II

SCOPE OF THE PRESENT WORK
2.0 SCOPE OF THE STUDY

2.1 Scope of the Present Study

Water is indispensable and one of the precious natural resources of this planet. Water not only covers three fourth of the earth’s surface but it also flows underground and floats in its air. The following table shows the distribution of water on the earth.

Table 1: Water – Distribution on the Earth

<table>
<thead>
<tr>
<th>Form of water</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean</td>
<td>97.2</td>
</tr>
<tr>
<td>Ice caps / Glaciers</td>
<td>2.14</td>
</tr>
<tr>
<td>Ground water to depth of 13,000 ft.</td>
<td>0.61</td>
</tr>
<tr>
<td>Fresh water lakes</td>
<td>0.009</td>
</tr>
<tr>
<td>Inland seas / salt lakes</td>
<td>0.008</td>
</tr>
<tr>
<td>Soil and subsoil moisture</td>
<td>0.005</td>
</tr>
<tr>
<td>Atmosphere</td>
<td>0.001</td>
</tr>
<tr>
<td>Rivers</td>
<td>0.0001</td>
</tr>
<tr>
<td>Biota (with in living plants, animals and humans)</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

[Source: Fetter C.W. (1994)]

2.2 Source

From the table it is clear that we have a limited stock of usable water of 0.0091% surface water (lakes and rivers) and 0.61% of ground water. The quantity of water vapour due to evaporation of sea water and river waters returns to the earth’s surface (same volume) by rainfall. The hydrological cycle in natures is more or less balanced in
Chapter-2

Scope of the Study

terms of charge (cloud formation) and discharge (rainfall). But we are using large quantities of ground water for agricultural, industrial and other domestic purposes. The wastewater from these is much polluted and on-mixing with the rivers polluting the rivers also. (Abrol et al., 1982)

Clean water is essential for healthy environment to support life systems on this planet. The National water policy of India (1987) states that water is a prime natural resource of basic human need and a precious national asset. It gives primacy to drinking water for both humans and animals over its other uses. The policy calls for control on the exploitation of ground water through regulation, integrated and coordinated development of surface and ground water.

This study is intended to monitor the ground water quality of Harihara taluk. The ground water quality of this region is being overstressed in order to meet the increase in demand for fresh water, due to the over pollution of surface water bodies, inadequate sanitary and drainage systems, the disposal of municipal and domestic sewage without treatment.

This may lead to depletion of water resources and increase in the concentration of physico-chemical parameters above the prescribed limits.

This pilot study will also be helpful in preparing the water supply schemes of the rural areas of Karnataka and country as a whole.

2.3 Objectives of the Study

The present investigation addresses the physico-chemical and bacteriological parameters of ground water emphasizing the quality of water, occurrence levels and distribution in aquifers of Harihara and its surrounding areas.
The following objectives were considered at the time of investigation.

- To assess the quality of ground water in the study area with respect to physico-chemical and bacteriological parameters.
- To assess the suitability of water for human utilization and for agricultural use.
- To assess the sources of pollution.
- To evaluate the levels of fluoride content in the ground water.
- To find out the heavy metals concentration in the study area.
- To classify the ground water on the basis of hydro-chemical parameters in order to determine the suitability of water for various purposes.
- To study the interrelationship between the various physico-chemical parameters of ground water though of statistical approach.
- To establish geo-chemical pattern of ground water.
- To suggest the remedies for efficient management of water sources to conserve them for future generations.
- Recommendation for better management of ground water.
- Suggestions for the further study.