

PARAMETERS OF UNDERGROUND WATER

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Abstract: - It is known fact that clean water is completely essential for healthy living. Yet there is a scenario that millions of people worldwide are deprived of this due to over exploitation, poor management system & by ecological degradation. Underground water is most useful water sources. Water is most essential for organisms. People can survive longer without food, but cannot survive without water more than 4 days. The assessment of the ground water quality was carried out in the different areas. The present work is aimed at assessing the water quality index (WQI) for the ground water. The ground water samples of all the selected stations from the areas where collected for a physiochemical analysis. For calculating present water quality status by stoical evolution and water quality index following parameters have pH, Alkalinity, Hardness, Chloride Content, Temperature, Acidity, MPN, Suspended solid, Dissolved solid, etc. The obtained results are compared with Indian standers drinking water specification IS: 10500-2012. The studies of physicochemical characteristic of this ground water sample suggest that the evolution of water quality should be carried out periodically to protect the water resource. Hence Priya P Loni, T.J.Patil, Manglekar published papers related with physiochemical parameters of underground water. Because to find the problems related with ground water parameters. Also giving the remedial to overcome the pollution of underground.

Keywords: - Ground water, water quality standards, water quality index

I. INTRODUCTION

Underground water is one of the natural source of pure and clean water that sinks into the soil and is stored, slowly flows and renewed underground water reservoirs. Ground water is mostly chemically non polluted when drawn from greater depth. Human beings have made aquifer as their prime requisite due to unavailability of reliable source of water as that of the ground water. So during past several decades, ground water quality has emerged as one of the most important and confronting environmental issue. Ground water forms a major source of drinking water supply for both urban and rural people in India. It accounts for about 88% safe drinking water in rural areas, where the population is widely dispersed. The use of ground water is not only confined to consumption purpose but also for irrigation in agricultural fields and in industrial processes. This use is increased with improved assessment and advances in pumping techniques demands made upon ground water in the recent years are increased considerably. The surface water is being polluted at rapid rate thus; the ground water extraction is increased. Ground water exploitation, its misuse and pollution is becoming more serious. In India, about 6 million people suffer from fluoride contamination and the source for most of the fluoride in ground water is of geological origin. Protection of ground characteristics, the quality of water that is its physiochemical characteristics should also be taken into consideration. The main objective of the present work was to assess the ground water quality in Kolhapur city. From the above discussion, it is known that ground water is very important for the domestic, industrial purposes. Necessary to use ground water very properly and important to check the quality of groundwater parameters.

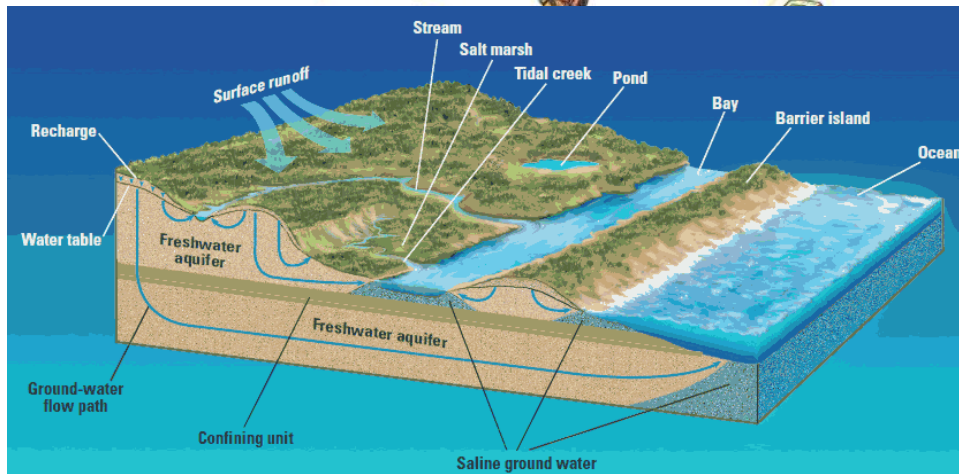


Fig.1. Underground water

Ground water source are the important water source in urban as well as in the rural area of India. More than today with a global with drawl rate of 600-7000km³/year(1). In the industrial area the ground water will be much polluted. The large amount of water will be percolated in ground and ground water will be polluted. In rural area ground water will not be polluted in large amount. This water will not change the physical and chemical parameter. As per geological formation and anthropogenic activates the physical and chemical parameter of underground water will be changes the place to place quality of ground water will be change. The most amount of ground water will be used for drinking purpose so ground water will be very important. The main source of water is ground water. There are various sources of ground water bore well, well are main sources. In Village the source of Drinking, domestic water is very important. Because of water level of ground is very important because of water level of ground is decrease than bore well is very important at that time. In the last few decades there has been a tremendous increase in the demand for fresh water due to rapid growth of population and the accelerated pace of industrialization according to WHO organization about 80% of all the dieses in human beings are caused by water so check of the ground water parameter is very important. In water more common soluble constituents is calcium, sodium, bicarbonate and sulphate ions. Crudities for drinking water quality have been by IS 10500-2012.

II. NEED OF STUDY

Groundwater is the water present beneath earth's surface in soil pore spaces & in the fractures of rock formation .A unit of rock or an unconsolidated deposit is called an aquifer when it can yield a usable parameters. Groundwater is recharged from and eventually flows to the surface naturally; natural discharge often occurs at springs and seeps, and can form oasis or wetlands. Groundwater is also often withdrawn for agricultural municipal & industrial use by constructing & operating extraction wells. Groundwater provides the largest source of usable water storage in the United States. Polluted groundwater is less visible, but more difficult to cleanup, than pollution in rivers & lakes. Groundwater pollution most often results from improper disposal of waste on land. Major sources include industrial, household chemicals & garbage landfill excessive fertilizers & pesticides used in agricultural, industrial waste lagoons, tailings & process wastewater from mine, industrial franking oil field brine pits, leaking underground oil, storage tank of pipelines & also sewage sludge.



Fig2. Pollution of underground water

The water used for drinking purpose should be free from toxic elements, living & nonliving organisms & excessive amount of mineral that may be harmful to health. Groundwater is ultimate, most suitable fresh water resource with nearly balanced concentration of the minerals for human consumption. Underground water is a major source for drinking water for all organisms. It is important source for not only humans but also for agricultural & industrial purpose. Water is most essential component for existence. The earth is called "blue planet" because of water covers almost three fourth of earth's surface. Water is not only essential for survival of living things but is also source of economical wealth and the creator of beautiful environment. Water is needed for agricultural production, industrial production and to meet various other needs for human survival. Now days, these precious resource is facing the two serious problem pollution and acute shortage. Fresh water and marine water both are facing the problem of deterioration of water due to change in water quality parameters. water pollution can be studied by studying the water quantity.

III. LITERATURE

Lot of research work is going on in the field of ground water quality. Some of the research paper has been reviewed over here in order to understand the importance of the work.

- 1) Priya P. Loni et al (2012): (1) Mrs. Priya Loni has done the study of ground water quality by keeping certain parameters in her mind. they are collected the bore well sample from 6 different villages and investigated for a parameter such as iron, fluoride, chloride, and nitrate content. The collected water sample is analyzed. After the analysis it seen that values of certain parameters within the limit while some were exceeding.
- 2) T.J. Patil et al (2012): (2) Ground water samples are collected from the different location of Dhule city and analyzed using standard method. The analysis is prepared for the various physicochemical parameters such as pH, electrical conductivity, Total hardness, TDS, Calcium, Magnesium, Chloride, Sulphate and DO. The observed value is compared with the standard given by WHO, ISI and ICMR. Some of the samples were found within the limit of the given standard while some are beyond the acceptable limit. Hence there need for proper conservation and management of ground water resource
- 3) Manglekar S. B. et al (2012): (3) Ground water has a different value according to their use like economic, social and environmental. Water plays a important role in the ecosystem at the surface and below ground level. Ground water and surface water interlinked with each other. In Kolhapur district along with surface water and ground water resource is used for drinking, irrigation as well as industrial purpose.
- 4) SmitaAnekar et al. (2015)⁽⁴⁾: The present work was undertaken to determine the Water Quality Index (WQI) of some lakes around the Kolhapur district. It was observed that the water quality of Shirol and Vadanage is very poor for human consumption, whereas water quality of Attigre and Pethvadagaon lake is good for human use.
- 5) B. N. Chavan et al. (2014)⁽⁵⁾: Water is essential for all life forms on the earth. Clean water for drinking is a major requirement for healthy society. Water for human society is mainly available from two major sources to fulfill most of the human needs, Surface Water and Ground Water and is largely affected by pollution of these sources. The present investigation was planned assess the Ground Water Quality at Kasaba-Bawda village in Karveer Tahasil of Kolhapur District of Maharashtra.
- 6) Devendra Dohare et al. (2014)⁽⁶⁾: Due to human and industrial activities the ground water is contaminated. This is the serious problem now a day. Thus the analysis of the water quality is very important to preserve and perfect the natural eco system. The assessment of the groundwater quality was carried out in the different wards of Indore City. The present work is aimed at assessing the water quality index (WQI) for the ground water of Indore City and its industrial area.

IV. CONCLUSION

Underground water resource is a limited natural water resource which plays a vital role in meeting the fresh water demand of human population for various purposes including drinking and domestic uses, irrigation, industrial purposes. The above six papers are concluded that some of the locations are polluted due to the improper use of underground water. So it become essential to study the underground water resources. They produce physiochemical and microbiological data were statistically and compared with standards given by BIS and WHO .Based on different parameters like pH, Temperature, Total dissolved solid, Alkalinity, Hardness, Suspended solid, Dissolved solid, Chloride, Turbidity, Ions and MPN experimentation and analysis has been carried out. Some of the papers are concluded that the studied water bodies are not safe for direct human consumption. Hence necessary to check first parameters of underground water and then used for drinking purposes, domestic uses, irrigation, industrial purposes.

V. REFERENCES

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