International journal of basic and applied research
www.pragatipublication.com
ISSN 2249-3352 (P) 2278-0505 (E)
Cosmos Impact Factor-5.960

Testing of nearby source of water before laying of water line

Shubham Shyamrao More
Civil engineering Department
Government college of engineering, Jalgaon,India

Received: 10 April Revised: 18 April Accepted: 26 April

Abstract

The main objective of testing of water sample of nearby lake (Manyarkhede) to ensure about the quality of water whether it is potable or not. The tests are conducted to decide the laying of water line from it or from municipality water line extension. In this we performed the tests as per there IS procedure and compare with IS permissible limits.Today there is no such provision of municipality water line. This result will be helpful to municipality engineer in future who have to lay the water line. As we have two probability of (1) extension of municipality line (2) water line from concerned lake. Due to this results economy in laying of water line can be achieved. As today's need economy as well as scarcity in the drinking water both can be fulfill.

I.Introduction

I. The earth surface of our planet is nearly covered by 71% water, only 3% of it is fresh. In this 3% about 75% is tied up in glaciers and polar icebergs, 24% in groundwater and 1% is available in the form of fresh water in rivers, lakes and ponds suitable for human consumption. According to survey in 2010, about 85% of the global population (6.74 billion people) had access to piped water supply through house connections. Water supply networks are part of the master planning of communities, and municipalities. Based on the observations and chemical analysis a case study of the lake water quality is performed in ManyarKhede,Jalgaon, in order to check the quality of water to be supplied. After getting observations and laboratory results the concentrations of major chemical elements like chlorine and dissolved solids in the source water are present in large quality.

II. Study motive

Pollution is commonly regarded as the result of the industrial revolution. Environmental quality of the area deteriorates mainly as a result of the increasing industrial activity. In order to find out the current status of the pollution in the area, due to the increasing trend in the industrial activities, it is very much essential to identify the various sources of pollution. Water is essential for the survival of any form of life. On an average a human being consume about 135 liter of water everyday for drinking,cooking ,washing,etc during his whole life period. The exploding population, increasing industrialization and urbanization causes water pollution. The water pollution by agricultural, municipal and industrial sources has become a major concern for the welfare of mankind.

International journal of basic and applied research
www.pragatipublication.com
ISSN 2249-3352 (P) 2278-0505 (E)
Cosmos Impact Factor-5.960

III.Study area

Manyarkhede,Jalgaon is a locality having various residencies like Fatema colony, having approximate 200 house and 5000 population. This area is out of the main city. Some people have bore well in their houses but some have very much scarcity of water. So this research work for two main objectives that is 1.economy 2.scarcity of water solution.

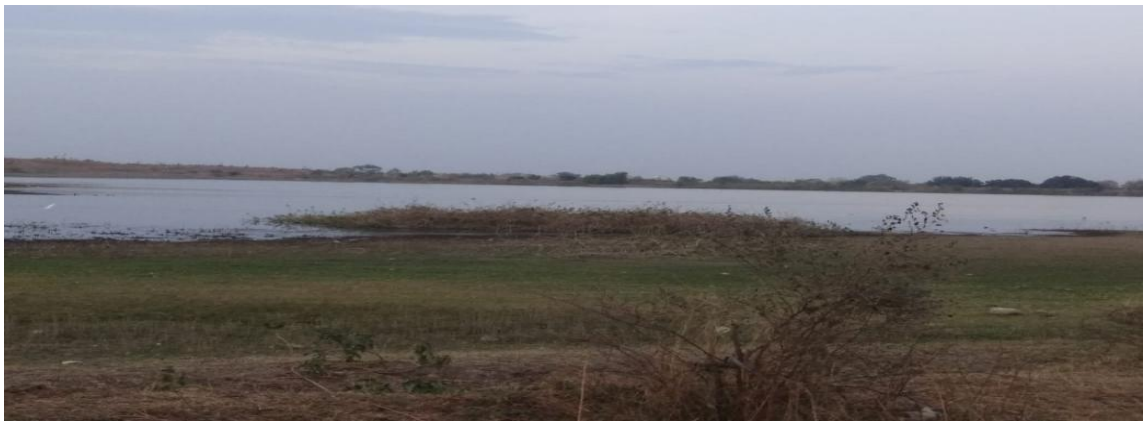

Figure 2.Site Picture

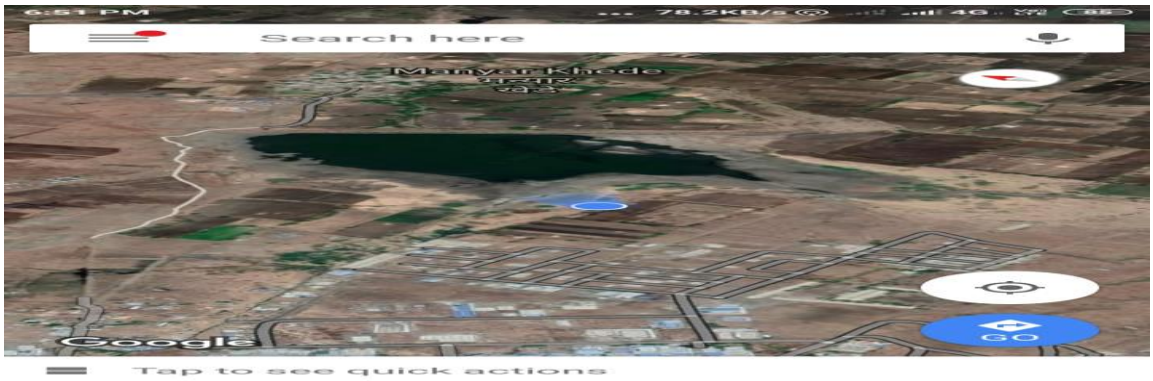

Figure 1.Google image of study area

III.Tests performed

According to Indian standards for quality assessment.

1. Dissolved oxygen

2. Chloride content

International journal of basic and applied research
www.pragatipublication.com
ISSN 2249-3352 (P) 2278-0505 (E)
Cosmos Impact Factor-5.960

3. Hardness

4. Turbidity

5. pH

6. Total solids

SNO	PARAMETER	DESIRABLE LIMIT	MAXIMUM PERMISSIBLE LIMIT	OBSERVED VALUE
1	Color			-
2	Odour	Unobjectionable	Unobjectionable	-
3	Taste	agreeable	agreeable	Agreeable
4	Turbidity (NTU)	2.5	5	3.9
5	pH value	6.5	8.5	8.1
6	Total Hardness	300	600	557.17
7	Chlorides	-	250	349
8	Total solids	500	1000	800
9	Dissolved oxygen	More than 4	-	6

Table no-1

Parameters	Status
Turbidity (NTU)	PASS
pH value	PASS

International journal of basic and applied research
www.pragatipublication.com
ISSN 2249-3352 (P) 2278-0505 (E)
Cosmos Impact Factor-5.960

Total Hardness	PASS
Chlorides content	**FAIL**
Total solids	PASS
Dissolved oxygen	FAIL

Table no 2

IV.Conclusion and suggestions:

We had done most of the important tests regarding the quality of drinking water of concerned lake.In above performed six tests one content in water is out of permissible limit that is chloride content. Chloride content can be removed from drinking water by distillation, reverse osmosis (RO) or deionization (DI), Boiling, carbon adsorption filters at house level purifier.

In this project the economy is achieved, as the source of water(lake) is about 100m away from residencies. This water line extension will take 10% of expenditure as compared to extension of water line of municipality from supreme colony, Jalgaon which is nearby area having municipality water line .This area is around 5km from Manyarkhede.

V.References

1. "Method for optimizing design and rehabilitation of water distribution systems". Zheng Y. Wu, Thomas M. Walski, Robert F. Mankowski, Gregg A. Herrin, Wayne R. Hartell, Jonathan DeCarlo. 2003-03-04.
2. Last, Ewan. Mackay, Rae. "Developing a New Scoping Model for Urban Sustainability". (2007).
3. Martínez, Fernando; Hernández, Vicente; Alonso, José Miguel; Rao, Zhengfu; Alvisi, Stefano (2007-01-01). "Optimizing the operation of the Valencia water-distribution network". Journal of Hydroinformatics. 9 (1): 65–78.
4. Laws, Edward A. (2018). Aquatic Pollution: An Introductory Text (4th ed.). Hoboken, NJ: John Wiley & Sons. ISBN 9781119304500.
5. UN-Water (2018) World Water Development Report 2018: Nature-based Solutions for Water, Geneva, Switzerland
6. Kelland, Kate (October 19, 2017). "Study links pollution to millions of deaths worldwide". Reuters.
7. Goel, P.K. (2006). Water Pollution - Causes, Effects and Control. New Delhi: New Age International. p. 179. ISBN 978-81-224-1839-2.