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Electrical Conductivity Present in Tube Well Water Sample of Ghansoli, Navi Mumbai

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ABSTRACT: The Tube well water samples were taken from Ghansoli, Navi Mumbai and analysed every month for six months. We were studied the Electrical Conductivity in tube well water sample. Tube well water sample content was found higher than the desirable limit of (18.4 °C to 30.2°C). The seasonal analysis indicated that the Electrical Conductivity were generally higher in summer and winter than their levels in rainy season.

KEYWORDS: Tube well water sample, pollutant, Electrical Conductivity.

I. INTRODUCTION

The ability of substance or water to conduct an electric current is called Conductivity. Specific electrical conductance is conductance by a cubic centimetre of a substance or water at 25 °C or specified temperature. Conductivity of water, therefore gives an idea about the total dissolved ionisable solids in it. Naturally conductance of water increases with an increase in the concentration of dissolved and dissociable substances.

In the present study, the Electrical conductivity were studied in tube well water samples at Ghansoli, Navi Mumbai. The tube well water samples were taken from six tube wells in the glass bottles by following standard procedure. Samples were taken from six tube well water samples, which are located at 1. Plaza Building, 2. Shivam Mall, 3. Nisarg Tower, 4. Sadguru Apartment 5. Tulsi Tower, 6. Platinum Acre, The samples were collected every month for six months and analysed in laboratory and determined the Electrical Conductivity.

II. MATERIALS AND METHODS

Electrical Conductivity is an ability of a water to conduct an electric current is called electric conductivity. It is generally measured with the help of a conductivity meter, having a conductance cell containing two electrodes of platinum black or carbon. These electrodes are mounted rigidly and placed parallel at a fixed distance conductance. When measured between these electrodes having a surface area of 1cm² and placed at a distance of 1cm is called Electrical Conductivity. It is the property of water samples, rather than that of the measuring system. The term specific conductance is also used in place of electric conductivity, but it is an absolute term. The unit of conductivity is Siemens' (s) cm⁻¹. The older unit mhos cm⁻¹ is now rarely used conductivity of most water is generally low and expressed in terms of us cm⁻¹. As ionization of solutes in water depends on temperature, conductivity results are reported at 25 °C.

III. RESULTS AND DISCUSSION

Distilled water has conductivity in the range of 0.5 to 5 micro Siemens'/cm. On the standard, an average seasonal conductivity of tube well water 5 ranged from minimum 120.7 micro Siemens'/cm to maximum 843 micro Siemens'/cm.

On the basis of three seasons, an average electrical conductivity of water is highest during winter season 289.66 micro Siemens'/cm, in rainy season 351.2 micro Siemens'/cm and in summer season was 328.7 was micro Siemens'/cm due to dilution factor and variation in ground water discharges.



Table 1: Electrical Conductivity Tube Well water sample of Ghansoli, Navi Mumbai

Stations	Jul	Aug	Sep	Oct	Nov	Dec
1	216.00	162.40	162.70	166.40	676.70	183.90
2	290.00	180.20	169.80	178.00	182.60	150.40
3	420.30	380.50	496.30	317.50	314.60	220.40
4	348.50	130.50	134.50	130.50	1443.0	480.30
5	340.70	167.30	168.30	167.50	1170.0	674.00
6	410.00	163.50	163.50	163.20	590.70	320.40

Tab. 2: Electrical Conductivity Tube Well water sample of Ghansoli , Navi Mumbai

Stations	Average	SD
1	298.05	210.61
2	393.57	267.87
3	356.59	253.66
4	282.88	164.29
5	323.85	181.38
6	429.10	324.47

Station	Summer	Rainy	Winter
1	230.17	235.65	161.21
2	260.15	180.60	162.41
3	390.14	225.40	430.18
4	530.35	220.35	525.35
5	412.85	254.36	250.50
6	170.90	245.68	225.75

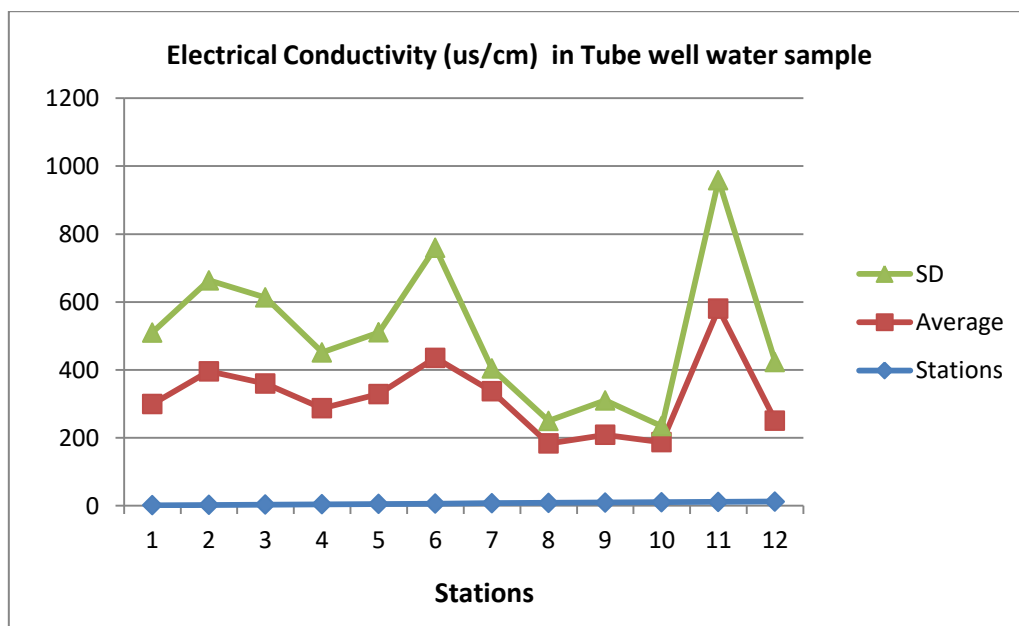


Fig 1: Average Seasonal Electrical Conductivity (us/cm) of Tube Well water sample of Ghansoli , Navi Mumbai



REFERENCES

- [1]. APHA; AWWA; WEF; -Standard Methods for the examination of water and waste water, 21st edition, Washington., DC, 2005
- [2]. C. S. Rao , B. S. Rao, A. V. L. N. Sh. H. M. Bharahi, - Determination of Water Quality Index of some Areas in Guntur District Andhra Pradesh, IJAGPT, 1 pp. 79-86, 2010
- [3].De. A.K., -Environmental Chemistry , 5th edition , New Age Int. Ltd.Publishers , New Delhi, 2004
- [4]. G.N., Mahtre, S.B.Chapekar., and I.V. Ramni, M.R.Patil and B.C., Halder, - Effect of Industrial pollution. *Env. Pollut.* 21 /A, 67-78, 1983
- [5]. Maiti , S.K., -.Hand Book of Methods in Environmental Studies . 1. Water and WasteWater Analysis 1st edition , ABD publisher, Jaipur, 2004
- [6]. S S Balloli; R K Rattan; and M Krishna kumari;- *Journal of the Indian society of soil sciences.*,48(1), 7578, 2000
- [7]. Sharma , D.K.- Seasonal variations in certain physico-chemical characteristic of Rampur reservoir of Guna district (M.P.),2005
- [8]. Pandya et al., *Curr. World Environ.* 8(1), 153-156 (2013).
- [9]. Varale Y.S., - Study of dissolved oxygen present in the underground water of Nipani town, *Current world environment*, 4(2), 421-423, 2009
- [10].Varale Y.S.-Study of chemical oxygen demand present in the underground water of nipani town, *ActaChim. Pharm. Indica* ,2(2),82-84, 2012



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