

EVALUATION OF GROUND WATER QUALITY OF JALKOT VILLAGE DISTRICT OSMANABAD (M.S.) INDIA

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ABSTRACT : The present communication deals with the study of evaluation of ground water quality of Jalkot village Dist-Osmanabad (M.S.). The was carried out during the year 2016 (January-December) for are valuation of ground water quality to analyze some physico-chemical parameters such as pH, Conductivity, Dissolved oxygen, Free CO₂, Total hardness, Total alkalinity, Chloride, Salinity and Total dissolved solids etc. All the values of samples found higher than the normal value.

Key words : Ground water quality, Jalkot, Osmanabad.

INTRODUCTION

Ground water is believed to be safe for human consumption therefore it is most preferred water but it is now proved that it is to be prove to pollution by many investigations to improper disposal of domestic and industrial waste water. Therefore it is essential to study the quality of ground water. Many works such as Praharaj *et al.* (2004), Tripathi (2003), Sambasiva Rao (1997) Mariappan *et al.* (2000), Pulle *et al.* (2005), Suryawanshi *et al.* (2004), Lokhande (2010) have been carried out study on ground water quality.

MATERIAL AND METHODS

The water samples were collected from the ten sampling stations of Jalkot. The sample were collected in cleaned polythene bottles, then the pH was measured using standard pH meter. The conductivity was measured using standard conductivity meter. The further physico-chemical analysis was carried out according to standard methods suggested by APHA (1985) and Trivedy & Goel (1984).

RESULTS AND DISCUSSION

pH : It was measures the concentration of hydrogen ions in water. According ICMR (1975), the maximum permissible limit is 6.5-9.2. In the present study pH value. Varies from 7.0-8.5. The low pH does not cause any harmful effect. The pH values were within the drinking water standard.

Conductivity : It is an index to represent the total concentration of soluble salts. The normal acceptance range is of soluble salts. The normal acceptance range is of water upto 1000 mbos/cm WHO (1984). The values of tested water found to be varied from 62.66-130.15 $\mu\text{m}/\text{cm}$. The value of tested water is under acceptable range.

Dissolved oxygen : The values of tested water were found within 4.6-13.4 mg/lit. D.O. adds taste it is highly fluctuating one. The permissible standard of dissolved oxygen is above 5 mg/lit. D.O. was found above the permissible limit.

Table. 1 Evaluation of ground water quality of Jalkot Village, district Osmanabad.

S. Name of the sampling sites	pH	Conduc- tivity	Dissolved oxygen	Total hardness	Total alkalinity	Chlorides	Salinity	T.D.S.
1. Bus Stand	8.5	120	11.10	120	350	100	200	1900
2. Naldurg Road	8.4	130.15	12.10	300	350	150	140	1000
3. Omerga Road	7.2	125	11.10	150	175	150	300	300
4. Parvati School	8.2	90	10.10	250	175	100	350	300
5. Kale College	7.8	75	10.10	250	150	70	200	300
6. Gram Panchayat	8.4	62.66	6.7	150	110	410	600	750
7. Aliyabad Road	8.3	70	4.6	120	350	350	500	1800
8. Petrol Pump	7.8	75	5.4	275	350	375	400	1800
9. Indira Nagar	7.9	75	13.4	260	400	350	350	1750
10. Kadam House	7.0	70	13.4	260.0	120	150	760	180

Hardness : The highest desirable limit of total hardness is 300 mg/lit. (ICMR,1975) It makes an adverse effect on health. Hardness of water samples varies from 120-300 mg/lit. The results of the present study shows all the samples were within the permissible range.

Total alkalinity : The phenolphthalein alkalinity is Zero, of the present samples but total alkalinity was found between 110-400 mg/lit. The ISI range of total alkalinity is between 50-200 mg/lit. The alkalinity is not harmful to human being.

Chlorides : It varies from 70-410 mg/lit of the present samples. According to ICMR (1975), the highest desirable limit of the chloride is 250 mg/lit. It gives salty taste at 250-500 mg/lit.

Salinity : The salinity content of different water samples varies between 140-760 mg/lit. All values of salinity are found the above permissible limit of WHO (1984).

Total dissolved solids : It varies from 180-1900 mg/lit. The ISI standard for dissolved solid up to 500 mg/lit. According to WHO (1994) The maximum permissible limit is 1500 mg/lit. The TDS value of the sample water of the selected places is above permissible limit.

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