

## Assessment of Drinking Water Quality at three Intermediate Colleges and two Degree Colleges of Municipality of District Sambhal, U.P., India

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*The paper reports drinking water quality from three inter colleges and two degree colleges of Sambhal municipality. The quality of drinking water samples were assessed by examining various physico-chemical and biological parameters viz, colour, odour, taste, turbidity, pH, specific conductivity, total dissolved solids, total hardness, chloride, fluoride, sulphate, nitrate, calcium, magnesium, dissolved oxygen (DO) and total coliforms. The analytical results were compared with drinking water standard (BIS-10500) prescribed by Bureau of Indian Standard, New Delhi. The water quality in general found to be satisfactory but the level of total hardness, chloride, nitrate, and magnesium were slightly higher at some locations and coliforms contamination was also found in some of drinking water samples.*

**Keywords:** Total Dissolved Solids (TDS), Dissolved Oxygen (DO), Coliforms contamination.

### 1. INTRODUCTION

Water is the most essential and important commodity for human consumption and it is one of the renewable resources which must be prevented from deterioration in quality. The different physico-chemical parameters such as colour, odour, taste, turbidity, pH, specific conductivity, total dissolved solids (TDS), total hardness, chloride, fluoride, sulphate, nitrate, calcium, magnesium, dissolved oxygen (DO) and total coliforms have significant role in potability of drinking water. Water to be used for drinking purpose must be without disease carrying bacteria, toxic substances, excessive amount of minerals and organic matter [1]. Today the drinking water is becoming scarce even though available in abundance. Therefore, the present study was made to determine drinking water quality.

### 2. MATERIAL AND METHOD

Sambhal is one of the municipalities in District Sambhal (Newly established district by Govt. of U.P.), Uttar Pradesh. The exact location of the study area lies between latitude 28° 25' to 28° 36' and longitude 78° 19'to 78° 39' E. It is located about 39 Kms south from Moradabad with very poor literacy rate, health and drinking water facilities. All the sites selected for sampling have hand pump water (HPW) and tap water (TW) facility. All these colleges are located within 7 Kms radius of City Sambhal taking roadways bus stand as center point. The students and teachers of

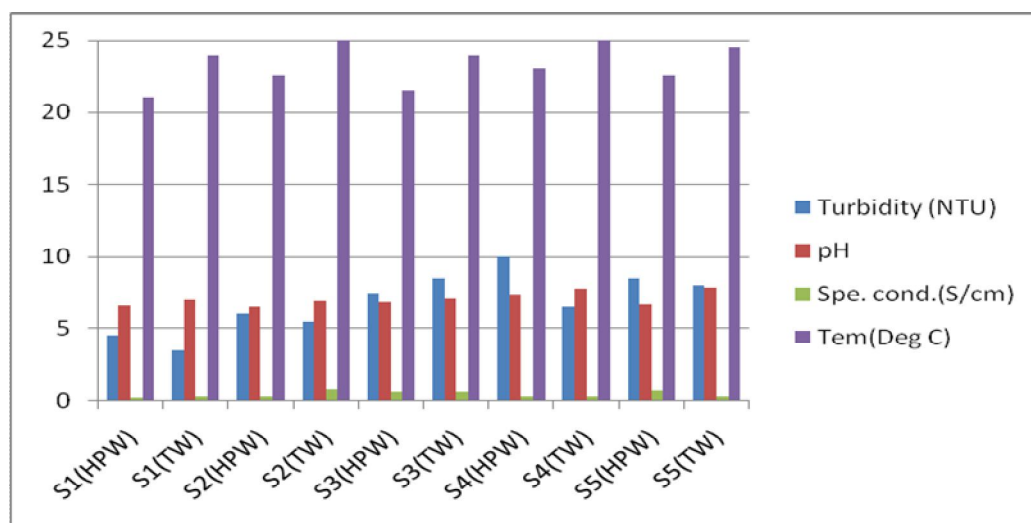
all five colleges (study sites) depend on hand pump water and tap water supply for drinking purpose. Drinking water samples were collected in clean poly bags of 2 liters capacity from all five sites as shown in Table-1 from hand pumps in October 2010. Preservation and analysis was carried out in Zoology Lab. of G.D.C Sambhal according to standard methods prescribed [7].

**Table 1:** The sample points from where water samples for analysis were collected.

Sample Site	Sampling locations	Distance from Roadways Bus Stand, Sambhal
S <sub>1</sub>	Hind Inter College, Begum Sarai	0.5 Kilometer
S <sub>2</sub>	MGM (PG) College, Chowdhari Sarai	1.5 Kilometer
S <sub>3</sub>	Z. U. Inter College, Sarai Tareen	3.0 Kilometers
S <sub>4</sub>	Umed Rai Inter College, Hayat Nagar	6.0 Kilometers
S <sub>5</sub>	Govt. Degree College, Hayat Nagar	7.5 Kilometers

### 3. RESULTS AND DISCUSSION

The results obtained from the physico-chemical and biological analysis of hand pump and tap water samples taken from different colleges have been presented in Table 2 with Figure 1 & 2 and Table 3 with Figure 3.



**Fig. 1:** Graph showing variations in different parameters of water samples collected from different sources.