



Study of Water Quality Parameters of Beehar River

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ABSTRACT

The current investigation of Beehar Stream water, which comprises of tests for temperature, variety, taste, pH, absolute solids, hardness, alkalinity, chloride, Body and DO. Rewa is one of the most significant city in the State of Madhya Pradesh which has Coordinated, concrete creation unit, toys o nuts, earthenware production and modest number of little and medium enterprises. A water great general is a standard or regulation comprised of the purposes to be made of a water body or fragment and the water charming guidelines imperative to safeguard that utilizes. The typical temperature, consideration of pH, turbidity, TDS (Absolute Broke up Solids), TSS (Complete Suspended Solids), DO (Disintegrated Oxygen), Body (Biochemical Oxygen Interest), all out hardness, alkalinity and chloride are seen to be 27.5°C, 7.53, 91.435 NTU, 170 mg/l, 47.64 mg/l, 8.26 mg/l, 4.5 mg/l, 226.9 mg/l, 212.15 mg/l and 225.7 mg/l respectively.

Catchphrases: water perfect, pH, hardness, by and large solids, general suspended solids, alkalinity, turbidity, Body, broke up oxygen, chloride.

INTRODUCTION

All natural responses emerge in water and it's miles the remembered machine of natural metabolic responses for a fluid arrangement that is critical for the safeguarding of ways of life. Most human exercises include the use of water in a solitary way or other. It very well may be referenced that person's initial home and civilization jumped up close by the banks of streams. Albeit the floor of our planet is somewhat 71% water, just 3% of it's miles new. Of these 3% around 75% is restricted in icy masses and polar ice sheets, 24% in groundwater and 1% is accessible inside the type of clean water in streams, lakes and lakes proper for human admission (Dugan, 1972). Because of expanding industrialization on one hand and detonating people on the other, the necessities of water convey were developing tremendously. Besides sizable a piece of this controlled pleasant of water is contaminated with the guide of sewage, business squander and a wide assortment of fake synthetic substances. Freshwater that is a significant and bound urgent guide wants to be secured, monitored and utilized precisely through person. Yet, unfortunately such has not been the situation, as the dirtied lakes, waterways and streams all through the world affirm. As per the researchers of Public Ecological Designing Exploration Establishment (NEERI), Nagpur, India, around 70 % of the to be had water in India is dirtied (Pani, 1986). Washing, work out, and a dispersion of business methodologies. The In spite of the way that the Earth is safeguarded with the guide of 75 rate water, one of the global's most pressing difficulties is immaculateness of ingesting water. Water is utilized for different thought processes, which incorporates drinking, washing, greatest uncooked water resources (>ninety%) are ground water and floor water. As per the World Wellbeing Association (WHO), healthy water is liberated from suspended flotsam and jetsam, inorganic garbage, and microbes. Proceed with weights on new water assets require the use of non-ordinary helpful asset to meet the creating global water interest. In the ingesting water cure techniques, the enhancement of the treatment is a trouble of remarkable subject. Contamination of surface and floor water because of horticultural, home, and business exercises still up in the air and reported on a typical premise. This is because of an absence of following focuses, and ingesting water pleasant and openness are essential components of human wellness. Drinking water may also consolidate illness causing retailers and unsafe substances, requiring continuous water magnificent following and observation to decrease the gamble to public wellness. The security of polishing off water is an on-going issue inside the overall town. Presently, around 20% of the field's populace needs get passage to safe drinking water, and extra than 5,000,000 people bite the dust yearly from sickness related with safe polishing off water or deficient sterilization. Roughly 1.1 billion people are conveyed through absence of get admission to safe polishing off water. On the off chance that everybody had safe drinking water and sufficient disinfection contributions, there would be 2 hundred million less instances of the runs and a couple of .1 million less passings because of diarrheal disease consistently. (Paul .L. Tracker et al.,2001)

METHODOLOGY

Site portrayal and test assortment

Surface water tests were gathered from stream Beehar situated at city of Rewa. Each of the two areas includes many little tanning and coloring units which depletes most of their effluents into the stream without appropriate effluent treatment. Also, the water asset was utilized for home grown, water

system and fishing purposes. Water tests from every one of the destinations were gathered in bottles, brought to the research center, handled inside 1-3 hrs, and put away at room temperature for additional examination

Physicochemical analysis

Following physico-synthetic properties were examined. All out disintegrated strong (TDS) of water and fixed buildup was estimated by vanishing technique. Disintegrated oxygen (DO) and biochemical oxygen interest (Body) of water was estimated by sodium thiosulphate titration strategy.

RESULT AND DISCUSSION

The water tests were dissected for physicochemical attributes. The physicochemical boundaries were examined in particular Temperature, pH, EC, TS, TDS, TSS, Absolute Hardness, DO, BOD₅ and Chloride (Table).

Temperature: Temperature of water may not be as significant in unadulterated water as a result of the extensive variety of temperature resistance in sea-going life, yet in dirtied water, temperature can significantly affect broke up oxygen (DO) and organic oxygen interest (BOD). The vacillation in waterway water temperature ordinarily relies upon the season, geographic area, examining time and temperature of effluents entering the stream. The water temperature was viewed as practically same 27.5° C. The variety is primarily related with the temperature of barometrical and atmospheric condition.

pH: The pH upsides of the examples went from 6.5 - 8.5, where the majority of the water tests different area tried in the review were viewed as in the reasonable scope of pH esteem suggested by a few wellbeing and contamination control associations for example WHO, CPCB, BIS for example 6.5-8.5. The pH of stream water was showing typical person all through the review period at the two locales. The pH esteem up stream site is 7.42 and down stream site is 7.63.

Total Solids: Strong alludes to suspended and broke up issue in water. They are exceptionally valuable boundaries portraying the compound constituents of the water and can be viewed as broad of edaphically connection that adds to efficiency inside the water body (Goher, 2002). The recorded TS esteem was pretty much comparable in all example focuses as well as two destinations. up stream site and down stream site 42.419mg/l, 52.863mg/l separately.

Total Dissolved Solids (TDS): Absolute broke down solids depicts how much inorganic salts of calcium, magnesium, sodium and so on and little extent of natural matter present in the water, where a high worth of the equivalent have been accounted for to be connected with intense myocardial localized necrosis as well as ischemic heart sicknesses in couple of studies. In this review, TDS values showed an extensive fluctuation going from < 10 ppm - >1500 ppm. The base worth of TDS was at upstream side at for example 10 PPM and most extreme at down stream side for example 14.86 mg/l.

Total Suspended Solids (TSS): Absolute suspended strong substance of water relies upon how much suspended molecule, soil and sediment which is straightforwardly connected with turbidity of water. The current examination, TSS worth of up stream site 32.419 mg/l and down stream site is 38.14 mg/

Hardness: Hardness of water is a significant thought in deciding the reasonableness of water for homegrown and modern purposes. Hardness is brought about by multivalent metallic cations and with specific anions present in the water to shape scale. The vital hardness-causing cations are the divalent calcium, magnesium. All out hardness was recorded at up stream site is (240.5 mg/l) and down stream site (245.2mg/l), Hardness was beneath as far as possible in all examples.

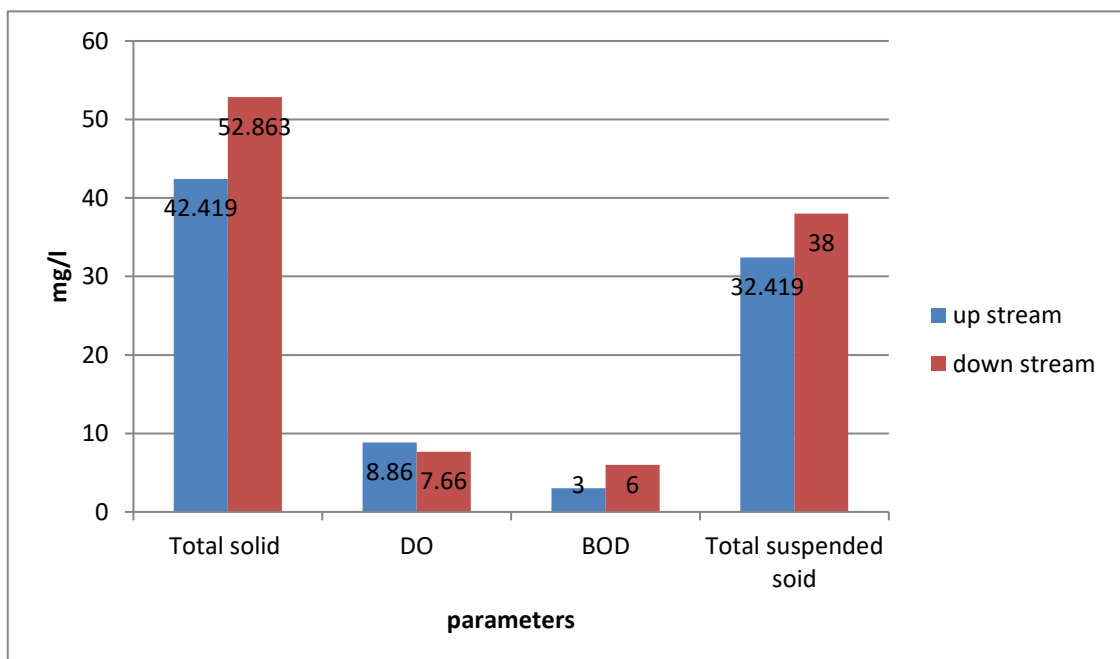
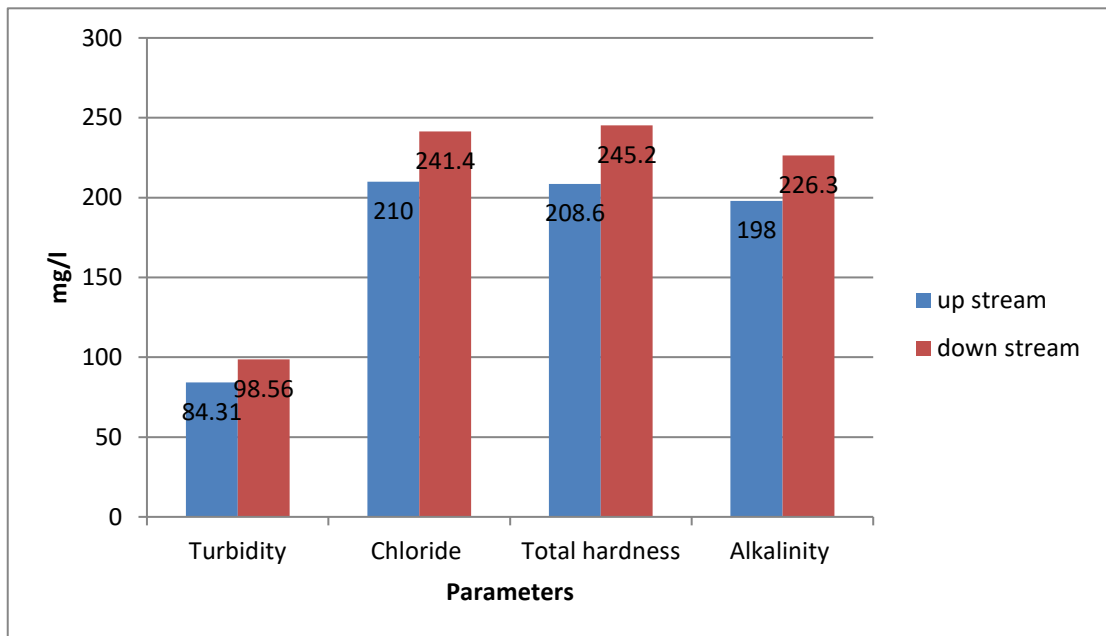
Chlorides: It happens normally in a wide range of waters. High grouping of chlorides is viewed as the signs of contamination because of natural misuse of creature or modern beginning. Chlorides are problematic in water system water and furthermore hurtful to amphibian life. The recorded upsides of up stream site 210 mg/l down stream site 241.4 mg/l. Higher convergence of chloride is dangerous to human utilization and makes medical conditions. Helpful constraint of chloride by IS:10500 (2012) for drinking design is 250 mg/l.

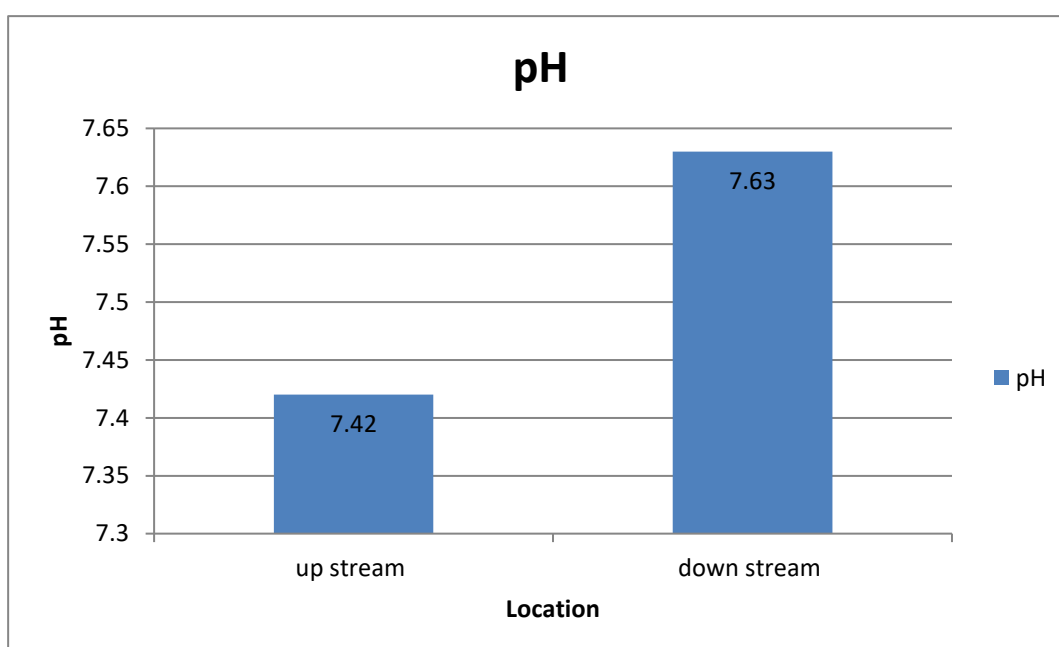
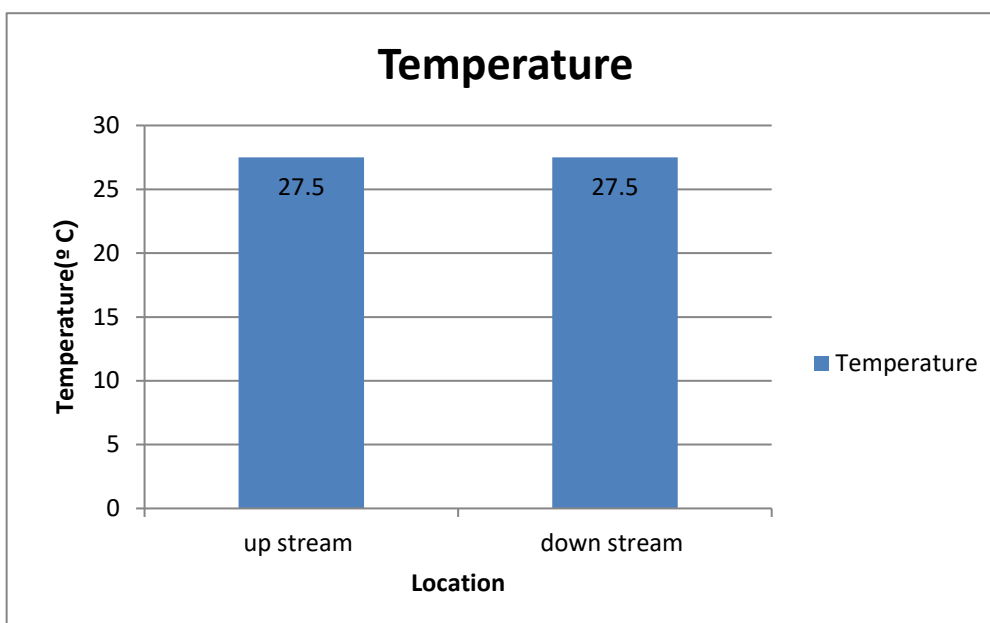
Dissolved oxygen (DO): The dissolved oxygen content is perhaps of the main calculate stream wellbeing. Its inadequacy straightforwardly influences the biological system of a stream because of bioaccumulation and biomagnifications. The oxygen content in water tests relies upon various physical, synthetic, organic and microbiological processes. DO esteems likewise show sidelong, spatial and occasional changes relying upon modern, human and warm movement. In the current review, the worth of DO went from 8.86 mg/l in up steam site followed by 7.66 mg/l in down stream site.

Biological Oxygen Demand (BOD): is a proportion of the oxygen in the water that is expected by the vigorous life forms. The biodegradation of natural materials applies oxygen pressure in the water and expands the biochemical oxygen interest. BOD₅ is how much oxygen expected by the living life forms took part in the usage and extreme obliteration or adjustment of natural water (Hawkes 1993). The incentive for Body was viewed as 3 mg/l in up stream side followed by 6 mg/l in down stream side

Alkalinity: it is the ability of hydronium ion to nutilize the hydrogen ion. it is due organic and inorganic matter. most common costituents of alkalinity of CO₃, HCO₃⁻, OH⁻. Alkalinity caused by CO₃⁻, HCO₃⁻, OH⁻ is called as carbonate alkalinity, bycarbonate alkalinity and caustic alkalinity respectively. The permissible limit of alkalinity is 200 mg/l as per is 10500:2012. alkalinity found to be 198mg/l and 241.4 mg/l at up stream site and down stream site respectively.

Sr No	Parameters	up stream site	Down stream site
1	Temperature	27.5° C	27.5° C
2	pH	7.42	7.63
3	Turbidity	84.31 mg/l	98.56mg/l
4	Total solids	42.419 mg/l	52.863mg/l
5	Total dissolved solid	10mg/l	14.86mg/l
6	Total suspended solid	32.419 mg/l	38.003 mg/l
7	Total hardness	208.6 mg/l as CaCO ₃	245.2mg/l as CaCO ₃
8	Alkalinity	198 mg/l as CaCO ₃	226.3 mg/l as CaCO ₃
9	Chloride	210mg/l	241.4mg/l
10	Dissolved oxygen	8.86 mg/l	7.66 mg/l
11	BOD	3 mg/l	6 mg/l





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