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Turbidity, TDS And Transparency in Water Bodies of Jakkapur from Omerga Taluka (M.S.) India

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ABSTRACT

The present investigation deals with the study of turbidity, TDS and transparency in water bodies of Jakkapur from Omerga Taluka (M.S.) India. The work was carried out during the year June 2018 to May 2019. The Jakkapur water tank is earthen man made them this Dam has been completed in 1978. Its having a maximum height of 14.83 m. Distance from Omerga to dam is about 08 km. The catchment area of the Dam is 89 sq. km. Its live storage capacity is 3.33 m3 and having full tank level 11.70 m. The water bodies are mainly used for irrigation, drinking water, domestic activity, cloth washing, plantation nursery and fishery purposes. The same the turbidity, TDS and transparency were studied in water of three spots A, B and C selected during a study period the average of turbidity is 21.6 NTU TDS is 129.6 mg/lit and transparency is 28.9 cm recorded the detail of results in next.

Keyword: Turbidity, TDS & Transparency, Jakkapur water bodies.

I. INTRODUCTION

The water is one of the abundantly available substances as in nature which man has exploited more than any other resources for the sustenance of life water in a good quality is required for living organism. Dam is the most important water resource water is a universal solvent and renewable source this properties of water on the earth is not clear so far availability of water on the earth is only one percent and 2% water occurs always in frozen state while 97% water is in the sea water is important resource and basic need of a human being the addition of excess materials which are harmful to living organism is the water pollution which makes water harmful to use for drinking domestic or agricultural, fishery purpose. The great solvent power of water makes its contaminated by pollutants the water pollution caused by organic compounds as a protein, carbohydrates, fats or by the synthetic compound as pesticides herbicides dyes etc. The organic pollutants originate from sewage Industrial waste which are toxic in natural and difficult to register due to addition of pollutants to water makes the water polluted water quality rippers to the chemical physical and biological characteristics of water. It is a measure of the condition of water relative to the requirement of one or more biotic species and are to

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any human need or purpose. It is the most frequently used by reference was set of standard agents which compliance can assessed. The most common standard used to access water quality relate to health of ecosystem, safety of human contact and drinking water. Turbidity into water is due to the colloidal and extremely small dispersion. The TDS are the total amount of mobile charged ion including minerals salts are metal ions dissolved in water if water containing more than 500 mg/lit of a TDS is not considered for drinking water but in unavoidable cases 1500 mi/lit TDS is allowed. Transparency of water is inversely proportional to turbidity created by suspended solids in water it becomes too important to investigate this water body for Turbidity, TDS and Transparency measured. This Jakkapur water bodies located near Omerga; a taluka place in Osmanabad District of Maharashtra state.

II. MATERIAL AND METHOD

The present study of Turbidity, TDS and Transparency in water bodies in Jakkapur from Omerga taluka during a year June 2018 to May 2019. Its location is Jakekur wadi longitude 76°- 38'-O" and latitude 17°-48'- 30. Water sample for analysis is selected from three spots A, B and C monthly. Samples from water bodies collected and measured in each month during the morning time. Turbidity and total dissolve solid TDS of water sample were measured on the spot using Portable water and soil analysis kit. Transparency was measured with the help of Secchi disc 20 cm diameter on black and white iron plate for a spot A, B and C. It has described in APHA (1989), Trivedi and Goyal 1984 Khedekar (1992), Jhingran (1982) and Laglar (1967)

III. RESULT AND DISCUSSION

	Spot A			Spot B			Spot C		
Aspect									
$\text{spot} \rightarrow$									
Mont									
h									
\downarrow					-			-	
	Turbidit	TD	Transparen	Turbidity	TDS	Transparen	Turbidity	TDS	Transparen
	у	S	су			су			су
June	28.5	75	30.5	25	76	30.2	25	77	30.3
Jul	31.5	81	29.5	30	80	29.4	30.5	81	29.3
Aug	24.5	79	28.5	24	81	28.3	25	80	28.5
Sept	24.5	91	28.2	24	91	28.1	24	90	28.5
Oct	18.2	82	28.2	19	82	29.1	19	81	29.1

Table 1:-Turbidity, TDS & Transparency in water bodies of Jakkapur from Omerga taluka MS. India during a year June 2018-19

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Nov	16	83	28.5	15	81	28.5	16	82	28.4
Dec	10	89	28.3	09	90	28.3	09	92	28.3
Jan	09	121	30	08	120	29.1	08	121	28.5
Feb	24	172	39.2	24	171	30	24.5	170	30
Mar	28	249	28.5	27	250	30	28	251	29.5
Apr	28	221	28.5	28	221	29.5	30	220	28.5
May	25	224	28.5	24.5	224	29.2	25	225	29.1
Avg	21.51	130	28.86	21.54	129	29.1	22	130	29

The analysis of Turbidity, TDS and Transparency in water bodies in Jakkapur (Table 1). We are observed and recorded the water of turbidity. It is found in the range between 8 to 31.5 NTU average found in 21.6 NTU at spot A it was a maximum 31.5 in July month and minimum 9 NTU in January month. At spot B maximum 30 NTU is found in month of July and minimum 8 NTU in month of January and spot C is measure maximum 30.5 NTU in month of July and minimum 8 NTU in month of January (Graph 1). Turbidity is caused due to presence of suspended matter clay, silt, colloidal particles planktons and other microorganisms Kataria et, al- (1996)





Total dissolved solid (TDS) refer to solid matter dissolved in water. It is observed and recorded (Table 1). The TDS of water bodies were found in the range between 75-25 mg/lit and average TDS is 129.6 mg/lit at spot a maximum 249mg/lit. in month of March and minimum 75 mg/lit. in month of June, the spot B is a maximum 250 mg/lit. in month of March and minimum 76 mg/lit. in month of June and the spot C is a maximum 251 mg/lit. in month of March and minimum 77 mg/lit. in month of June in 12 months (Graph 2). TDS were high in summer and medium in monsoon and winter season. According to the TDS up to 200 mg/lit. were in medium productivity reservoirs and more than 200 mg/lit. were in highly productive reservoirs Pawer and Phule (2005)



Graph 2. TDS in water bodies of Jakkapur from Omerga taluka MS. India during a year June 2018-19

The transparency of natural water is an indicator of productivity the extended to which height can penetrate depends on the transparency of standing water column. It was observed and recorded (Table 1). The transparency of water was found to be in the range between 28.1 to 30.5 cm and average of transparency is 28.9 cm.at spot A transparency is a maximum value recorded 30.5 cm. in month of June and minimum 28.2 cm in month of September and October. The spot B is maximum 30.2 cm. in month of June and minimum 28.1cm. in month of September.



Graph 3. Transparency in water bodies of Jakkapur from Omerga taluka MS. India during a year June 2018-19

At sports C is a maximum 30.3 cm. in month of June and minimum 28.3 cm.in month of December in the 12month record (Graph 3). The transparency of water bodies affected by the factor like planktonic growth, rainfall, suns position in the sky angle of incidence of a rays, cloudiness. Visibility and turbidity due to suspended inert particulate matter Kadam et.al. (2007).

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