

Assesment of Pollution Load in Water of Sarodha Dam District Kabirdham (C.G)

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Abstract- The present study of the “Assessment of pollution load in water of Sarodha Dam Dist. Kabirdham (C.G.).The dam water is life line dam of Kabirdham district. The dam water is used for city water supply, human bathing, cattle bathing, sanitation , fish culture, irrigation and for other domestic uses. For physic chemical investigation, water samples were collected form dam water .Various physico-chemical data of the dam water were analyzed every month as per APHA, 2005 & NEERI, 2005.

Keywords- Dam water, Physico-Chemical Parameters, Monthly variation. Analysis method

I. INTRODUCTION

Water is the most important substance for life. Water place an Indispensable an in substance of life and it is a key pillar of health, determinant. Clean and non polluted water is basic need of human being. Better quality of water described by its physical, chemical and biological, Characteristics. increased human population industrialization use of Fertilizers in agriculture and man—made activity. The natural aquatic resource or causing heavy and varied pollution in aquatic environment leading of water quality and depletion of aquatic biota [Pandey et al.1993)]. Fresh water is one of the most important resources crucial for the survival of all the living beings. It is even more important for the human being as they depend upon it for food production. Industrial and waste disposal as well as cultural requirement. Human and ecological use of ground water depends upon ambient water quality [Trivedy et al. (1986), Kordarkar M.S. (1992)].Dam water finds multiple uses in every sector of development like agriculture, industry, transportation, aquaculture, public water supply etc. However sin ancient times dam have also been used for cleaning and disposal purposes. The quality of drinking water should be checked at regular time interval because due to use of contaminated drinking water. Human pollution suffers from a varieties of water born diseases has been seen which a cause of health hazards [U.S.Pujeri et al. (2010)]. The physico-chemical parameters of water and the depends of all life process of these factors make it describable to take as an environment [Rajesh Kumar (2011)].

Bathing and swimming in dam are also among children and adults in the local community. it is difficult to understand the biological phenomena fully because the chemistry of water reveals much about the metabolism of the ecosystem and expand the hydro biological [APHA (1985)]. Water should be free from the various contamination viz. Organic and inorganic pollutants, heavy metals, pesticides etc. In this present study the assessment of extent of pollution in water and the analysis of water quality in terms of physico-chemical parameters of Sarodha Dam water.

II. METHEODOLOGY

Sampling site :-Sarodha Dam water is surrounded by small mountains, just 7-8 Km. from Kawardha.

Collection of Sample :- The water samples were collected in pre-cleaned air tight plastic containers of one liter capacity. The collected sample was stored at 4 °C to mention its original characteristics

Analysis method:-

Physico-chemical analysis & method

It is very essential and important to test the water before it is used for drinking, domestic, agricultural or industrial purpose. Water must be tested with different physico-chemical parameters. Selection of parameters for testing of water is solely depends upon for what purpose we going to use that water and what extent we need its quality and purity. Water does content different types of floating, dissolved, suspended and microbiological as well as bacteriological impurities. Some physical test should be performed for testing of its physical appearance such as temperature, color, pH, turbidity, TDS etc, while chemical tests should be perform for its BOD, COD, dissolved oxygen, alkalinity, hardness and other characters.

The water quality parameters pH-measured using standard pH meter, Turbidity By turbidity Meter total Dissolved solids (TDS) by standard methods, calcium content by EDTA titrimetric method, total hardness (TH) by EDTA

titrimetric method, P and M alkalinity, BOD by dissolved oxygen loss method and chemical oxygen demand (COD) by potassium dichromate method.

III. RESULT AND DISCUSSION

Physical parameter of water such as pH, temperature, turbidity and total dissolved solids (TDS) are listed. pH ranges of water shows variation in its ranges. The result of the chemical analysis of water in the present study in Table is necessary to make a comparison of water given by WHO standards. The pH of water show variation in its ranges. It indicates that they are in range of water quality parameter permissible limit. TA within the limits. Chloride content in water is low, the fluoride content in water is low. The value of DO, BOD, COD, were in limits. Turbidity was higher in all

observed parameters. Also classification on the basis of total hardness shows that maximum samples in all areas contain higher value of hardness.

The pH values are in the range 6.5-7.8. This is in accordance with the World Health Organisation (WHO.) The temperature was found to be in the range between 18 to 22.2°C during study. In present study the hardness of sample within limits prescribed by WHO. In the present study The effluents with high TDS value may cause salinity problem if discharged to irrigation water but under WHO. Sarodha Dam water in the present study COD value is high within limit. Whereas the chloride value observed in table was well above the standard desirable limits prescribed by WHO (1984). BOD values were observed within the limit for all the samples. Sulphate might enter characteristic water through weathering of stores.

Sampling Site Sarodha Dam Kawardha in the Month November – June 2015

Parameter	Unit	November	December	January	February	March	April	May	June
Temperature	°C	21.1	22.2	21.1	22.2	21	18	18.8	19
pH	–	7.7	7.4	6.2	6.9	7.1	7.0	7.8	6.1
Turbidity	NTU	50	55	69	63	26	27	7.1	26
Alkalinity	mg/l	50	45	44	47	59	58	58.0s	57
Hardness	mg/l	48	48	37	36	50.4	47	58.0	48
Chloride	mg/l	3.0	3.3	3.2	4	20.9	20	21.0	20.8
Sulphate	mg/l	22	26	18	21	34	27	42	35
DO	mg/l	7.6	7.5	4.9	4.3	6	6.2	4.8	6.9
BOD	mg/l	5.1	5	7.7	7.2	3.9	4	3.4	4.2
COD	mg/l	27.2	20	22.1	21.0	15	13	24.4	18
Total solids	mg/l	190	176	161	153	169	174	205.0	214
TDS	mg/l	122	116	110	153	140	172	162	170
TSS	mg/l	68	60	51	48	29	29	31.1	35.3

IV. CONCLUSION

The present study shows that, stretches of the river in forested areas had lower levels of nutrients compared to areas close to human activities. The most affected areas were those close to human settlements. Agricultural areas also significantly contributed to higher concentrations of nutrients concentration in the Sarodha dam water system. The contribution of industrial discharge to river water pollution

was not significant because of few numbers of industries that were in production during the study time.

It is recommended that, efforts to reduce waste discharges into the dam should be done especially in agricultural areas. Efforts to reduce pollution of the river system should include awareness creation to the local people on best methods for soil and water conservation in the cultivated areas. In towns relevant authorities should be made

aware of the current poor water quality of the Saroda dam water and steps should be taken to reverse the situation. Planned urban settlements should be emphasised.

ACKNOWLEDGEMENT

The authors are equally grateful to Professor Dr. MANISH UPADHYAYA C.V. Raman University, Hisser for his valuable suggestion and cooperation of data and grateful guidance. My thanks and appreciations also go to my colleague in developing the project and for giving me such attention and time.

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