



ENVIRONMENTAL ASSESSMENT OF NEW AJ RIVER WATER QUALITY AT SHIVGHAT RAJGARH (BIAORA) M.P.

Dr. G.D. Agrawal¹, Dr. Rashmi Bhargav²

^{1,2} Government Girls P. G College, Ujjain M.P., India

Abstract:

Newaj River is the main source of drinking water, irrigation, fish culture and other activities in the Malwa region. In this study samples were collected from Shiv ghat near Bada Mandir (Lord Shri nathji Mandir Rajgarh during the year 2016 on monthly basis. pH TDS Cond. Turbidity fluoride and heavy metals were determined by Instrumental methods. Higher values (more than permissible limit) of COD, BOD, Nitrate and Coliform were observed in summer season.

Keywords: *Environmental; New aj River; Water; Quality.*

Cite This Article: Dr. G.D. Agrawal, and Dr. Rashmi Bhargav. (2017). "ENVIRONMENTAL ASSESSMENT OF NEW AJ RIVER WATER QUALITY AT SHIVGHAT RAJGARH (BIAORA) M.P." *International Journal of Engineering Technologies and Management Research*, 4(12: SE), 104-106. DOI: 10.5281/zenodo.1163779.

1. Introduction

Newaj River is also known as Nirvindhiya River. It originates near western boundary of the Sehore Districts M.P. It flows towards the north centre Shajapur, after flowing for about 48 Km in Shajapur District, it passes through Rajgarh District and it finally join the Parwan River in Jhalawar district of Rajasthan. Newaj River mainly flows in Rajgarh District about 142 Km Rajgarh is situated on the bank of Newaj River. Total length of the river is 220 Km.

Due to urbanization environmental pollution is increasing day by day. The disposal of city waste and sewage is becoming major problem. Untreated sewage which also contains pathogens gives rise to disease causing bacteria in the river. When peoples take bath in the river, pathogenic bacteria gets transmitted to the human body imparting their health.

2. Methodology

The Newaj river is surveyed throughout the year from Jan. 2016 to Dec. 2016 Samples were collected on monthly basis from ShivGhat, Rajgarh. pH, TDS, Conductivity, Turbidity DO BOD, Fluoride, Na, K, pb. Fe was determined by Instrumental methods and Ca, Mg, alkalinity Total hardness COD and Coliform by chemical method. The above physico-chemical and biological parameter were determined as per methods suggested by APHA (1976).The temp. pH and DO

were recorded immediately after collection of samples, other samples were analyzed in laboratory within 24 hrs.

3. Result and Discussion

The water of Newaj River is so much polluted at Shivghat Rajgarh. Temp. Ranges between 21°C-45°C Turbidity increases in monsoon season. pH ranges between 7.5 to 7.9. The pH value 7.5 to 8.4 is the best range for the aquatic life. It was noticed that Alkalinity increases in summer season. Nitrate was observed more than permissible limit in pre monsoon. Nitrates gets into the river from leaking septic tanks, cesspools and animal wastes. The highest value of total hardness was observed in summer months. The DO content in water has a direct effect on BOD levels of water. The highest value of DO was observed in winter season. BOD in increasing order was observed in pre monsoon season. Drinking water should have BOD less than 01 ppm. COD in all season was found more than permissible limit (150 ppm) as Indian standard. Increasing value of E. Colliform was observed in summer season. The discharges of sewage introduce pathogenic micro-organism into the aquatic environment. The diseases caused by bacteria are dysentery, enteritis cholera and typhoid. The concentration of Na, K, pb, and Fe were found in permissible limit.

4. Conclusion and Recommendation

It was Observed that water quality of Newaj River at Rajgarh have been affected adversely by human activities by overcrowding accompanied by inadequate sanitation and also by unregulated enormous discharge of waste water into water system. The problem of water pollution in River can be minimized by adopting following techniques.

Sewage and sludge released by municipal bodies must be chemically and biologically treated before final disposal into River.

Garbages corps organic wastes etc. must be banned into fresh water of River Newaj.

All the toxic metallic element should be chemically treated before waste released into water bodies.

Microbial contamination must be eliminated by saturation of effluent with chlorine or chlorine producing compounds. Increase in the incidence of water borne diseases must be taken for in advance and remedial measures should be taken in this regard.

5. Observation Table

S.No.	Parameter	Monsoon season July, Aug, Sep, Oct 2016	Winter season Nov, Dec, Jan, Feb 2016	Summer season March, April, May, June 2016
1	Temp	41°C	21.1°C	45°C
2	Turbidity	4.2	2.0	3
3	Alkalinity	180	190	300
4	Conductivity	.72	.65	1.12

5	TDS	120	110	130
6	pH	7.74	7.79	7.78
7	DO	6.0	6.4	5.0
8	BOD	2.5	2.3	2.9
9	COD	260	180	250
10	Chloride	70	30	170
11	Fluoride	.90	1.0	1.0
12	Phosphate	2.0	1.0	1.1
13	Total Hardness	145	120	170
14	Ca. Hardness	70	90	80
15	Mg-Hardness	70	58	105
16	CO ₂	6.0	7.0	8.0
17	NO ₃	40	20	100
18	SO ₄	15	3.0	6.9
19	Na	85	39	90
20	K	6.5	4.1	4.7
21	Pb	.04	.06	.05
22	Fe	.30	.70	.40
23	Coliform	900	300	1900

References

- [1] Sinah Beshavi SR Quality of underground irrigation water in barnala tehsil of Sarangpur district Punjab India. *ECO* 20 (1) 17-21, 1993
- [2] A.V .Rao, B.L Jain, I.C Gupta, *Ind. Jour. Environ. Health* 35:132 (1993).
- [3] WHO guidelines for Drinking water quality vol.1 recommendation. WHO, Geneva P.I.(1984).
- [4] Ranjana Yadav & O.N Choubey Environmental Assessment of kareli sugar mill effluent on local ground water. *Jr. of Ind-pollution controls* 26(1) 2010 pp 115-118.
- [5] B .Parmar, hemant, jignesh Patel, Pad maja sudhakar and V.J Koshy. *Jr of Environ. Science of engg.* 2000,48,2,135.
- [6] S.v Agarkar, R.E Khadson and M.V kadu *oriental Jr. of chemistry*, 2005, 21(3)607.
- [7] Bis 1991 Indian Standard drinking specification (first revision) bis New Delhi.
- [8] Malviya Ashutosh. Divakar S.K Choubey O.N “Narmada River water physiological monitoring at pilgrim place harda. *Jr. of contemporary Science* vol (1) 22-25 (2012).