



P-ISSN: 2349-8528
 E-ISSN: 2321-4902
www.chemijournal.com
 IJCS 2022; 10(1): 04-06
 © 2022 IJCS
 Received: 04-11-2021
 Accepted: 06-12-2021

Shubhangi Shirdhonkar
 Research Scholar, SAM Global
 University, Bhopal,
 Madhya Pradesh, India

Study of physico-chemical parameters of Narmada river water at Mandleshwar (M.P.), India

Shubhangi Shirdhonkar

Abstract

Narmada river is also known as life line of Gujarat and Madhya Pradesh for its huge contribution to the state of M.P. and Gujarat. It is a major source of drinking water, irrigation and hydroelectricity for M.P. In the present study water sample of Narmada River from Mandleshwar has been collected to evaluate its suitability for drinking, domestic and irrigation purpose. The important physical and chemical parameters are taken for study like pH, Temperature, conductivity, Turbidity, Total dissolved solid (TDS), Suspended solid, Alkalinity, Total hardness, Ca, Mg, Chloride, Fluoride, Nitrate, Dissolved Oxygen, BOD, COD were examined in the laboratory. Standard method APHA(2002) was used during the examination. After examining parameters in the lab it was concluded that the water quality is suitable and safe for drinking and irrigation purposes.

Keywords: Narmada river, Mandleshwar, Khargone, physico-chemical parameters, quality of water

Introduction

Mandleshwar is a town and nagar panchayat in the Khargone district of the state of Madhya Pradesh. It is on the banks of Narmada River, 8 km east of Maheshwar and 99 km south of Indore. It is a "Pavitra nagri" as termed by the government of Madhya Pradesh, as it is an ancient town. The Narmada river also called Reva and previously also known as Narbada is largest flowing river of state of M.P. It is a major source of drinking water, irrigation and hydroelectricity for M.P. Physico-Chemical parameters of water maintain the water quality for different purposes but in polluted water their ratio is disturbed in water and water get polluted and not suitable for domestic and irrigation purposes.

Present study evaluates the quantity of physico-chemical parameters in water and to check water is suitable or not suitable for drinking and irrigation purposes. In India many researchers have done work on these parameters. Also many studies have done on Narmada River.

Material and Methods

The water samples were collected from the Narmada river at mandleshwar during May 2021. The river water samples were collected in acid cleaned plastic containers as per standard method suggested by APHA (2002). For investigation, water samples were brought to laboratory immediately. pH of water sample measured by pH meter using standard solutions; Temperature of water sample measured by Thermometer; Conductivity measured by conductivity meter; Turbidity of water sample measured by turbidity meter; Total dissolved solid (TDS) measured by TDS meter; suspended solids measured by filtration; Total Alkalinity determined by Acid base titration method; other parameters also measured in laboratory as per standard method.

Results and Discussion

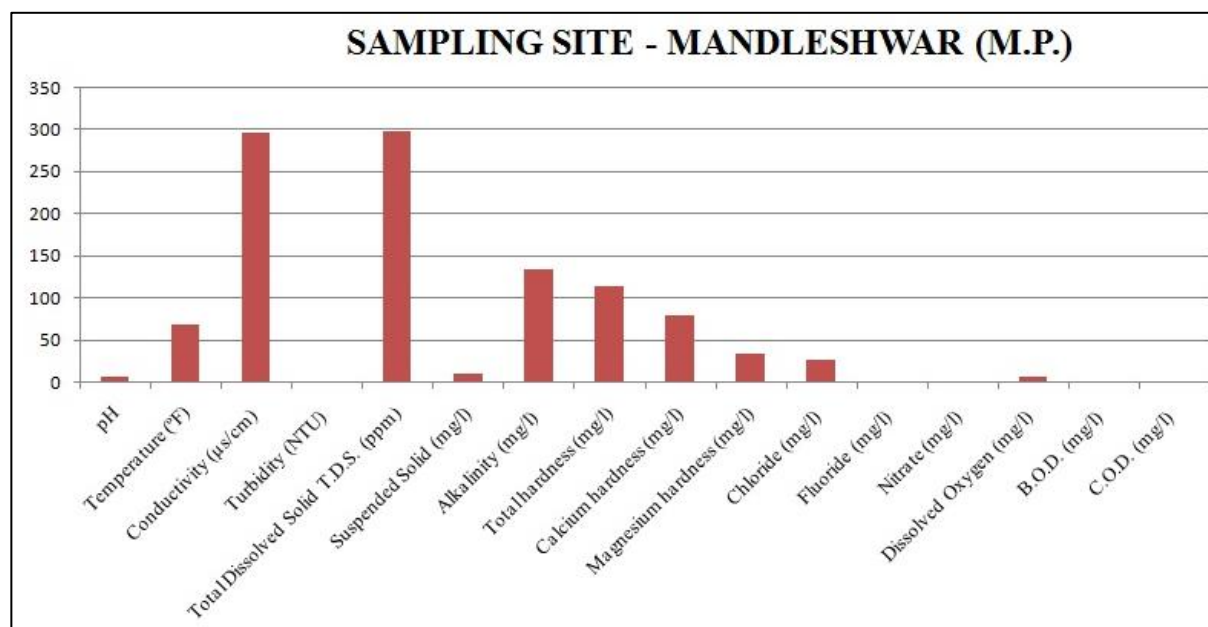
The results of study have been reported in the given table. The values of all the parameter were found to be within the limits. The pH value observed 7.8. Value of temperature at sampling water was observed 69. Turbidity was observed 0.16NTU. Total dissolved solids (TDS) observed 298ppm. Suspended solids were observed 11.3mg/l. Alkalinity was recorded 135mg/l. Total hardness in sampling water was 115mg/l. Calcium & magnesium hardness was recorded 79mg/l & 35mg/l respectively. Chloride, Fluoride and Nitrate in sampling water were observed

Corresponding Author:
Shubhangi Shirdhonkar
 Research Scholar, SAM Global
 University, Bhopal,
 Madhya Pradesh, India

28mg/l, 0.11mg/l & 0.005mg/l respectively. Dissolved oxygen (DO) observed 7mg/l. B.O.D. & C.O.D. were observed 1.5mg/l & 1.6mg/l respectively.

Table 1: Observation

Sampling Site - Mandleshwar (M.P.)	
Physico-Chemical Parameters	Values
pH	7.8
Temperature (°F)	69
Conductivity (µs/cm)	295
Turbidity (NTU)	0.16
Total Dissolved Solid T.D.S.(ppm)	298
Suspended Solid (mg/l)	11.3
Alkalinity (mg/l)	135
Total hardness (mg/l)	115
Calcium hardness (mg/l)	79
Magnesium hardness (mg/l)	35
Chloride (mg/l)	28
Fluoride (mg/l)	11
Nitrate (mg/l)	0.005
Dissolved Oxygen (mg/l)	7
B.O.D. (mg/l)	1.5
C.O.D. (mg/l)	1.6

**Fig 1:** Observation Chart Showing values of Physico-Chemical Parameters

Conclusion

All Physico-chemical parameters examined in laboratory & observed that all parameters range in Narmada river water at Mandleshwar is in limit so we can conclude that water of Narmada river at Mandleshwar is suitable for drinking, irrigation and all other useful purposes.

References

- Solanki M, Saraswat H *et al.* Analysis of water quality using Physico-chemical parameters of River Narmada, Madhya Pradesh, India. International Journal of Advanced Research (IJAR). 2021;9(01):754-757.
- Saluja DS *et al.* Water Quality Analysis of Narmada River with Reference to Physico-Chemical Parameters at Hoshangabad City, M.P, India. International Journal of Science and Research (IJSR), 2018, 9.
- Khichi Y *et al.* Narmada River Water Quality Assessment Using Benthic Macro-Invertebrates at Barwani, Rajghat Madhya Pradesh. Bioscience Biotechnology Research Communications. 2018;11(1):161-166.
- Bhakta D, Anand W, Vaisakh G, Das SK *et al.* Impacts of water regulation on *Tenulosa ilisha* in the Narmada Estuary, Gujarat, India. ICAR-CIFRI, Barrackpore Riverine and Estuarine Fisheries (REF) Division BFSc. MFSc. Ph.D. (Fisheries Resource Management) Journal of Fisheries. 2018;6(1):563-568.
- Laad P, Shrivastava CS *et al.* Physico-chemical & Bacteriological studies of Omkareshwar dam reservoir at River Narmada with special emphasis on human health. Shodhganga: A reservoir of Indian theses @ Inflationet. 2016;3(1):21-25.
- Sharma J, Parashar A, Bagre P, Qayoom I *et al.* Phytoplanktonic Diversity and Its Relation to Physico-chemical Parameters of Water at Dogarwada Ghat of River Narmada. Current World Environment 2015;10(1):206-2014.
- Malviya P, Dwivedi AK *et al.* Physico-chemical parameters of Narmada River Water: A review.

- International Journal of Chemical Studies. 2015;3(2):01-04.
8. Piplode S, Barde VS *et al.* Physico-chemical Evaluation of Narmada River Water at Khalghat, M.P., India. Research Journal of Chemical Sciences. 2015;5(5):24-26.
 9. Barde VS, Piplode S, Thakur V, Agrawal R *et al.* Comparative physico-chemical analysis of Narmada River Water at Barwani and Khalghat, M.P., India. Research Journal of Chemical Sciences. 2015;5(3):6-8.
 10. Salahuddin K, Visavadia M, Gor S, Gosai C, Soni VK, Hussain MD *et al.* Diel variations in limnological characteristics of Omkareshwar reservoir of Narmada River, India. Journal of Ecology and the Natural Environment. 2014;6(1):12-24.
 11. Sharma A, Bora CR, Shukla V *et al.* Evaluation of Seasonal Changes in Physico-chemical and Bacteriological Characteristics of Water from the Narmada River (India) Using Multivariate Analysis. Natural Resources Research (Nat Resour Res) 2013;22(4).
 12. Kumari M, Mudgal LK, Singh AK *et al.* Comparative Studies of Physico-Chemical Parameters of Two Reservoirs of Narmada River, MP, India. An International Research Journal of Environmental Science 2013;8(3):473-478.
 13. Pandey R *et al.* Book studies on mitigation Biomonitoring of River Narmada: The Largest Western Indian River. Central Pollution Control Board. 2010.
 14. Shrivastava V, Shrivastava A, Gupta P, Vishwakarma MC *et al.* Study of Physico-chemical parameters of groundwater quality of Khargone District in Madhya Pradesh. International Journal of Applied Environmental Sciences, 2010, 5(4).