Periodic Water Quality Monitoring of Ground Water Sources in Jashpur District, Chhattisgarh, India

D. Sinha[1], S.K. Jain[2], A.K. Mishra[3], K.K. Dubey[4] and M.M. Vaishnav[5]*

1. Department of Chemistry, Govt. N. P.G. College of Science, Raipur, Chhattisgarh, **INDIA**
2. Department of Chemistry, Govt. R.B.S. NES P.G. College, Jashpur, Chhattisgarh, **INDIA**
3. Examination Controller, C.G. P.S.C., Raipur, Chhattisgarh, **INDIA**
4. Department of Physics, Govt. G.B. College, H'bazar, Korba, Chhattisgarh, **INDIA**
5. Department of Chemistry, Govt. G.B. College, H'bazar, Korba, Chhattisgarh, **INDIA**
Email: drmmvaishnav@yahoo.co.in

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ABSTRACT

The extensively study of ground water sources of entire Jashpur district has been taken in perspective of physico-chemical qualities of water. In our study, we have given the more emphasized the detection of fluoride and iron concentration in ground water sources. The analysis was done in the period of March, 2015 to February, 2016. At the period of investigation, ten sampling spots were selected and samples were collected in sterilized bottles. The collected samples were subjected for analysis technique by the standard methods. The experimental result were compared with the standard values stipulated by the monitoring agency BIS (2012) and WHO (2011). Some parameters such as Turbidity (125NTU, JD-5), Fluoride (5.90 mg L^{-1}, JD-8), Calcium (27.2 mg L^{-1}, JD-5), Magnesium (178 mg L^{-1}, JD-6), TH (436 mg L^{-1}, JD-6), DO (2.89 mg L^{-1}, JD- 2), COD (14 mg L^{-1}, JD-3), Iron (47.3 mg L^{-1}, JD-3), have been found beyond the standard values. In statistical parameters, the % CV was obtained upto 65.82 for iron. The correlation was established from +Ve to -Ve between selected qualities. The +Ve correlation was ranging from +0.022 (0.072) between pH vs K to +0.983 (17.33) between SAR vs Na. In negative correlation, the ranges were seen -0.03(-0.11) between K vs TDS to -0.89 (-6.26) between SAR vs DO. WQI was calculated from 926.5088 (JD-8) to 2896.6531 (JD-5), indicated water sources became contaminated by the undesirable chemical constituents study field.

Key words: Ground Water, Physico-chemical, WQI, % CV, Correlation coefficient.
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