



HIGH DISSOLVED OXYGEN CONTENT OF INDIAN HOT WATER SPRING A NOVEL REPORT

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ABSTRACT

The terrestrial and perennial hot spring is located at Unkeshwar village of Nanded district, India is unique amongst presently active systems, the physicochemical characteristics of this hot spring. Water samples were collected from Unkeshwar hot spring. The hot springs was free of any algal growth and dirt. The natural temperature, pH, DO, COD, sulphate, sulphite and chloride were analyzed. The hot spring water have supported different thermophiles.

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INTRODUCTION

Unkeshwar is a terrestrial hot water spring, located in Nanded district of Maharashtra State in peninsular India. It has moderately high temperature with neutral pH. The spring is located in geologically distinct zone of Deccan continental basaltic rock. Very little information is available about this spring. Being rural and totally undeveloped area the spring has not studied well. We have performed certain experiments to investigate physicochemical properties of spring water. Selected physicochemical analysis showed very similar nature of spring water any normal reservoir, except the remarkable change that has been recorded with temperature that is 62°C. Very exciting and innovative results were obtained when dissolved oxygen content of spring water was determined. We have recorded three fold rises in dissolved oxygen content of Unkeshwar hot water when compared with other hot spring or warm water. Further investigations of area that surround hot water spring showed existence of one cold spring in vicinity of hot spring. To justify abnormal rise in dissolved oxygen content of hot spring assumption can be made. The reason for rise could be either mixing of cold spring with hot spring beneath the reservoir or that may be due to catalase like activity of hot spring as any algal growth or photosynthetic activity was not observed.

Table 1: Physicochemical characteristics of Unkeshwar hot springs

Sr. No.	Parameter	Surface sample			Sub-surface sample		
		Mean	Standard deviation	Variance	Mean	Standard deviation	Variance
1	Temperature °C	62.0	±0.0	0.0	62.0	±0.0	0.0
2	pH (pH unit)	7.0	±0.0	0.0	7.0	±0.0	0.0
3	Initial DO (mg/L)	10.43	±0.34	0.11	13.51	±2.77	7.67
4	COD (mg/L)	120.0	±21.55	464.4	80.0	±10.0	100.0
5	Total hardness (mg/L)	116.7	±0.08	0.0061	123.0	±5.77	33.34
6	Chloride (mg/L)	38.32	±1.43	2.068	24.82	±0.22	0.051
7	Sulphate (mg/L)	59.0	±0.0	0.0	62.0	±1.15	1.33
8	Sulphide (mg/L)	16.67	±0.0	4.0	14.6	±1.15	1.33

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