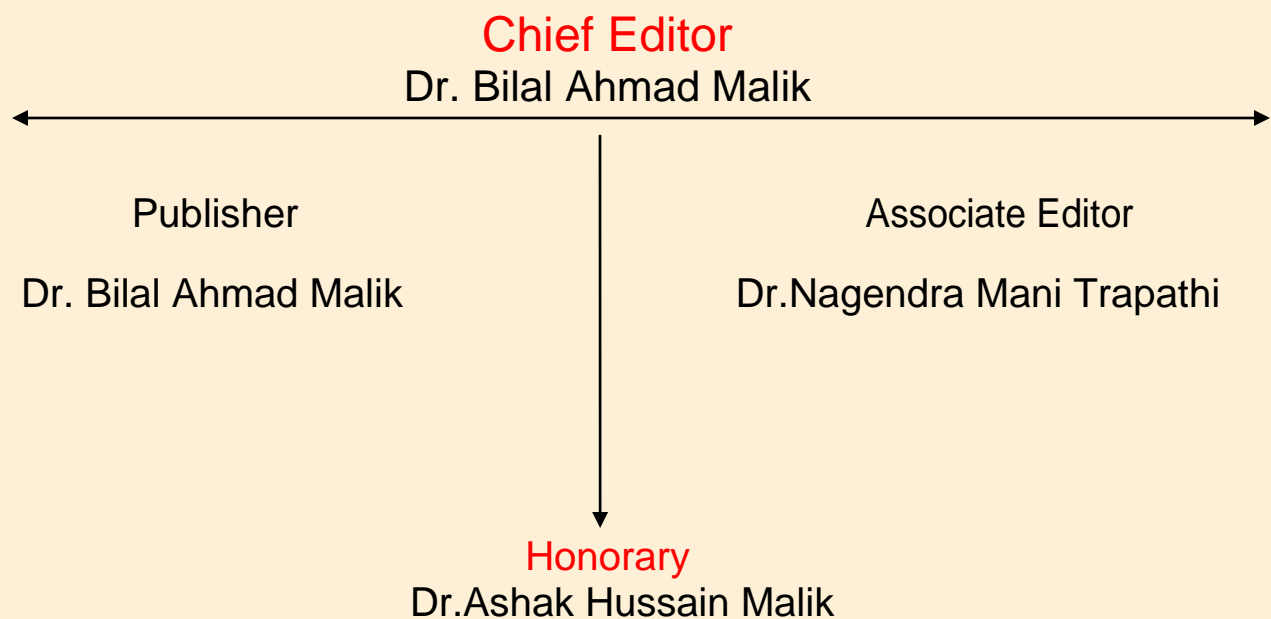


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## EFFECT OF POLLUTION OF DISSOLVED OXYGEN CONCENTRATION IN SEER STREAM OF SHIVALIK HIMALAYAS

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### ABSTRACT

*This paper addresses the effect of pollution on dissolved oxygen content (DO) in a Shivalik Himalayan stream during early of day in the summer season (May, 2014. June 2015). The study showed that the dissolved oxygen in the stream is below 4 mg/L in a stretch of 2600m and, therefore, water is not fit for public supply, bating wildlife and fish culture.*

### INTRODUCTION

Oxygen is the regulator metabolic processes of plant and animal communities and indicator of water condition. This factor provides more information about the overall health of stream than any other chemical parameters. Seer stream is one of the sub tributaries of river Satleui in Bilaspur district of Himachal Pradesh. It lies at latitude of 31° – 26 59'0 N and 75° – 43 – 11' east longitude. The bilaspul town falls in Shivalik hills of lower Himalayan region, at altitude of 600m above mean sea level. The town is located on left bank of Seer stream. It is small rainfed perennial stream takes its origen form near Sarkaghat and meandering over 20 km in the district of bilaspur. It ultimately joins Satleuj River. It swells during rainy season but gets reduced to

narrow stream in the summer. The stream serves as a drinking water source for the region. For want of proper sewerage system in the town, the night soil from the houses is being treated through septic tanks. The water from kitchen and baths flows in open drains and is being discharged in to two local nallahs, namely Ghumarwin nallah-I and Ghumarwin-ii finally joins Seer stream. The present study addressed the DD concentration in Seer stream during early hours of the day in summer season.

### MATERIAL AND METHOD

The weir for water supply scheme Ghumarwin was selected as a reference point and the monitoring of DO was carried out at downstream of it at 6 points

up to 5 km (Figure-i). The guideline given by USEPA (1997) was followed for sampling. The DO was fixed at site and analysis was done within half an hour in the laboratory. The sampling was repeated after 15 days and the present study is spread over a period of 2 months of summer season. The DO was determined following the standard methods (APHA, 1992).

**RESULT AND DISCUSSION**

The DO in the Seer stream was monitored during early hours of the day during May and June, 2014 and observations are given in Figure 2 and 3. During May the maximum value of DO was observed as 6.3 mg/L and minimum of 1.8 mg/L. It is less than 4 mg/L in a distance of 1600 m, which is in between the confluence point of Ghumarwin nallah-I with Seer stream to a distance of about 1000 m downstream on it. During June, the maximum value of DO was observed as 5.5mg/L IN A DISTANCE OF 2600 m, which is in between the confluence point of Gumarwin nallah-I with Seer stream to a distance of 2600 m downstream on it. The bureau of Indian standards is laid down tolerance limits for inland surface waters subjected to pollution (BIS, 1982). The Indian standards have considered the following classes of water: (A) Drinking water source without conventional treatment but after disinfection. (B) Organized outdoor



Figure 1. Location plan of sampling station on Seer stream

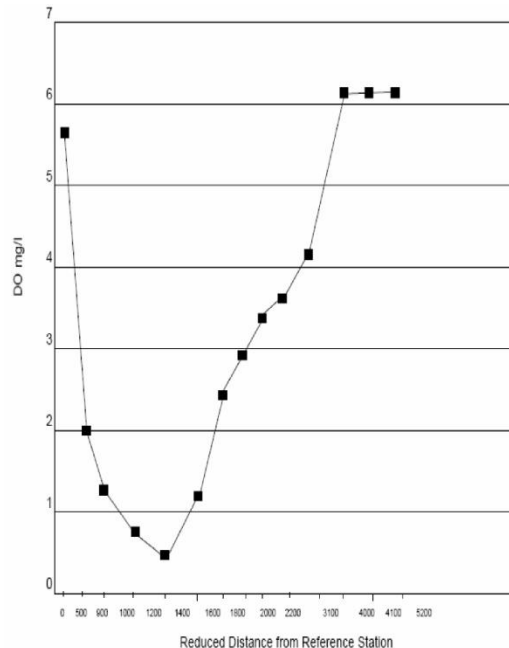
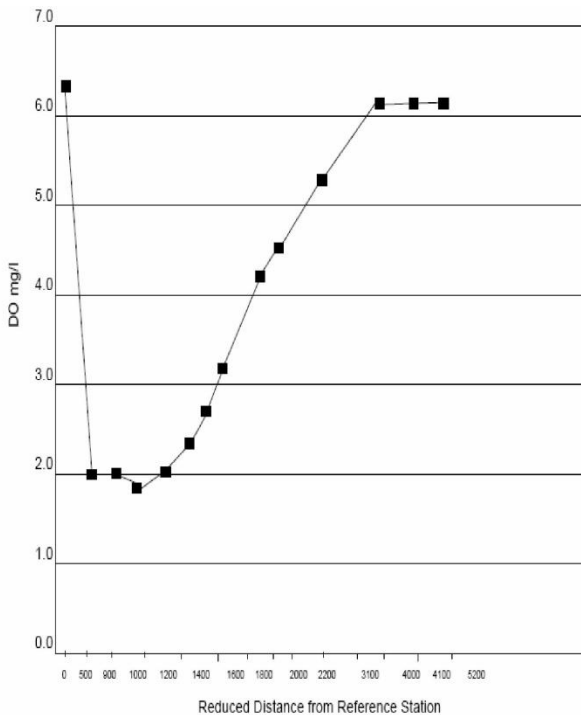


Figure 2. Concentration along Seer stream in May, 2014 at 6.00 A.M.



**Figure 3. Concentration along Seer stream in June, 2014 at 6.00 A.M.**

**Table 1: Classes of water as per BIS, (1982)**

Characteristic Classes	Classes				
	A	B	C	D	E
DD, mg/L	6	5	4	4	-
BOD <sub>s</sub> mg/L	2	3	3	6	-
Total Coliforms MPN/100 mL	50	500	5000	5000	

bathing. (C) Drinking water source after conventional treatment (D) Propagation of wildlife and fisheries and (E) Irrigation and industrial cooling. The standards fixed for the dissolved oxygen (DO), biological oxygen demand (BOD) and coliforms for various classes are given in table 1.

**CONCLUSION**

As per the Indian standard (BIS, 1982), the water of Seer stream falls in class-E. It is, therefore, not fit for public supply, bathing, wildlife and fish culture. Thus it can be concluded that the stream is not in good health and the stretch of Seer stream right from confluence of Gulmarwin nallah-I to 2600 m downstream is heavily polluted. Steps should be taken to treat the waste-water of town entering the stream so that it can be restored to its original condition.

**ACKNOWLEDGEMENT**

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**REFERENCE**

- ❖ APHA 1992, Standard methods for the examination of water & waste water) 18<sup>th</sup> edn). American public health Association Washington D.C.
- ❖ BIS 1982, Tolerance limits for inland surface water. IS: 2296-1982.
- ❖ Chattopadhyaya, S.N. etal, A short term study of river Ganga in Kanpur region. Indian J. Env. Health 26: 244-257.
- ❖ Rout, Jayashree and Bula Das, 2001. Impact of municipal sewage on river Barak (S, Assam). Bulletin National Institute of Ecology I: 25-31.

- ❖ Sharma. Moti Ram, J.K, Bassin & A.B. Gupta, 2002, Water quality modeling and management of hathali stream in lower Himalaya. International Conference on Challenges and options for sustainable development of Himalayas-Beyond 2002 Proceedings pp 63-64.
- ❖ Sinha A.K. etal. 1985 Water quality of river Sai in Raebreali-Pareliminary report, J . Plant Res. Env.2; 87-90.
- ❖ USEPA, 1997, Volunteer stream monitoring: A methods manual EPA-841-b-9003

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