

## Performance Evaluation of Pilot Rotating Biological Contactor for Decentralised Management of Domestic Sewage in Delhi

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**Abstract :** In a Rotating Biological Contactor (RBC), the biological film responsible for removal of pollutants is formed on the surface of discs. Evaluation studies of a pilot RBC designed to treat sewage of 150 persons with BOD Loading Rate: 8.2-26.7 g/m<sup>2</sup>/d, Discharge: 57.6 - 115.2 m<sup>3</sup>/day, HRT 1.25 - 2.5 hrs, at STP Yamuna Vihar Delhi. Removal of organic materials through use of fixed film reactors such as RBC is accomplished by means of a biological film on the fixed media. May and June in Delhi are dry summer months where the ambient temperature is in the range of 35oC to 45oC. July is a wet monsoon month that receives occasional precipitation, cloud cover, high humidity, with ambient temperature in the range of 30oC to 35oC. The organic and inorganic loads to the RBC employed in this study are actual city sewage conditions. Average in fluent BOD concentrations have been 330 mg/l, 245 mg/l and 160 mg/l and the average COD concentrations have been 670 mg/l, 500 mg/l, and 275 mg/l. The city sewage also has high concentration of ammonia, phosphorous, total suspended solids (TSS). pH of the city sewage is near neutral. Overall, the substrate conditions of city sewage are conducive for biological treatment through aerobic process. The presentation is a part of the ongoing collaborative research initiative between IIT Delhi and Karlsruhe Institute of Technology, Germany which is going on for last 15 years or so in the treatment of sewage waste of Delhi using semi-decentralized treatment system based on Rotating Biological Contactor.

**Keywords :** Rotating Biological Contactor (RBC), COD, BOD, HRT, STP

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