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Title of Invention: - Use of River Bed for Online Treatment of Polluted River Water Using Modified Flow Pattern for Non Perennial Rivers

Patent Application No.: - Application number 201621019679

Abstract: Wastewater treatment is a burgeoning issue for all the developing countries including India. As per the CPCB statistics, hardly 30% wastewater is getting treated (average national figure). The major wastewater, domestic as well as industrial goes into the water bodies untreated. The Sewage Treatment Plants (STP) as well as Effluent Treatment Plants (ETP) are either non functional or are not sustainable due to energy requirement or skilled manpower requirement.

The current research is an attempt to check the feasibility of giving on line treatment to the wastewater while it is flowing through the river. It is proposed to give a zigzag flow pattern by constructing a central channel and bunds at regular intervals (@ 300 to 500 m c/c). The staggered openings in both horizontal & vertical direction help for the settlement of heavy solids as well as floatation of suspended solids in alternate compartments. Further, due to shallow depth proposed, an algal growth will take place in alternate compartments. This will help for further degradation of suspended organic matter through combined action of algae bacteria symbiosis, similar to oxidation pond. The model studies carried out in this regard have shown that the results are quite encouraging. It is possible to treat the polluted river water to about 60 to 70% as far as BOD & COD reduction is considered.

Outcomes:

1. Reduced load on STPs & ETPs, particularly reduction in cost required for collection and conveyance of waste originating from non point sources.
2. Reduced pollution getting into the river thus reducing the pollution load on the downstream users.
3. Reduced probability of pollution getting transferred to human being through food chain & food web.