Industrial Waste Water and Performance of Common Effluent Treatment Plants (CETPs)

There are 28 planned Industrial estates in Delhi generating about 218 MLD of industrial waste water. Delhi State Industrial Development Corporation (DSIDC) under Department of Industries, Govt of NCT of Delhi is responsible for providing infrastructure for treatment of industrial effluent. DSIDC by incorporating Societies to service the respective Industrial Areas, has to supervise that the industrial association stake responsibility for the efficient operation and management of the plants. The CETPs must also treat the industrial effluent from clusters of small scale industries. DSIDC has commissioned 13 Combined Effluent Treatment Plants (CETPs) and this treated industrial effluent finally goes to the sewers of DJB or drains under the control of Irrigation and Flood Control Department. The outfall indicators are generally much higher than stipulated in the CPCB parameters.

Status of Common Effluent Treatment Plants (CETPs)

13 CETPs have been established by Delhi State Industrial and Infrastructure Development Corporation Ltd. (DSIIDC) in various industrial areas having total capacity of 221 MLD. There is a wide gap in the installed capacity and its utilization. Analytical results as provided by Delhi Pollution Control Committee indicate that CETPs installed at Mangolpuri, Lawrence Road, SMA, Nangloi, Jhilmil, Okhla, Wazirpur, Narela and Bawana are not meeting the prescribed standard with respect to one or the other criteria pollutant. Qualitative and Delhi CETPs discharging treated effluent into river Yamuna – water quality discharge from CETPs in Delhi (May- Aug 2018) CPCB is HERE

Maintenance of Minimum Environmental Flow in the River

Yamuna downstream of Hathnikund has negligible fresh water flow for most part of the river as it flows towards Delhi for about 9 non-monsoon months in a year. Besides meeting the requirement of water for the ecological processes to be sustained, the river water also provides dilution to the waste water released through the drains carrying domestic sewage and industrial waste. In the absence of flow, there is no dilution capacity in the river to absorb large quantities of untreated sewage generated in Delhi.
According to CPCB norms, Yamuna in Delhi should have a BOD of 3 mg/l (Max) and Total Coliform level of 5000 MPN/100 ml for a ‘C’ class river. Therefore, even when the entire quantity of 3900mld is treated to a BOD level of 20 mg/l, the river needs a dilution capacity of seven times to achieve this target. If treatment level is further improved to a BOD level of 10 mg/l, fresh water flow equivalent to more than 3 times is required in the river.

For a treatment level of 20 mg/l of BOD, fresh water flow equivalent to 3911 x 7 = 27377MLD or 316 cumecs (m3/second) {1 cumecs = 86.4 MLD} is necessary to maintain ‘C’ class water quality. Similarly, for a treatment level of 10 mg/l of BOD, fresh water flow of 3911x 3.33= 13000 MLD or 150 cumecs is necessary. Treatment level below 10 mg/l of BOD has been found to be prohibitively expensive.

There being no fresh water flow in the river downstream of Wazirabad, all efforts can be negated unless the flow is increased which alone can rejuvenate the river.

Old treatment plants in Delhi are designed for sewage treatment levels of BOD of 30 mg/l while new ones are for BOD of 10 mg/l. According to DJB, even if the entire sewage of Delhi is treated before disposal, in the absence of any dilution available in the river, the resultant BOD of river water may still remain in the range of 10-15 mg/L as compared to the desired 3 mg/l. Given the overall shortage of water in the Yamuna basin, possibilities of additional fresh water flow for dilution purposes appears to be remote at the present moment. Therefore, to improve the river water quality, innovative and holistic approaches like creating of treatment wetlands in the floodplains, recycling of waste water, reducing the demand for fresh water, rain water harvesting in the riparian cities, creating off river reservoirs upstream of Wazirabad both in Haryana and Delhi, improving water use efficiency of agriculture and gradual switching over from water intensive crop varieties and practices to less water intensive crop varieties and agronomic practices will have to be considered in medium and long term. Almost 85% water that is diverted from river Yamuna through barrages at Hathanikund is used for agriculture and therefore water conservation through agricultural practices is crucial to improving flow in river Yamuna..

Coliforms are disease-causing pathogens/bacteria present in sewage. As against the CPCB standard of 5000 MPN/100 ml for class C river, coliforms in Yamuna along Delhi are at an
astronomically high level of 31.8 million. This category of pollution is more harmful than organic (BOD) pollution as pathogens and bacteria are the potential source of water borne diseases like hepatitis-A, cholera, typhoid, ring/hook worms etc. Control of coliforms in river water and prior to that in treated sewage is considered essential as Yamuna is used by thousands of people for bathing.