STUDY OF INFILTRATION OF COOUM RIVER ON GROUNDWATER QUALITY AROUND THE RIVER STRETCH

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ABSTRACT

The effect of infiltration of Cooum River on the surrounding ground water parameters focuses on the abnormalities in the aquifer water parameters along the entire 17 km stretch of the river on either sides of the bank. Cooum is a main river flowing through the central part of the Chennai district, carries a major portion of drainage water along with waste discharges from industries which is highly polluted giving it hardly any time for regeneration.

Water samples were collected from 12 sampling wells during Pre-monsoon (June 2017- July2017) and Post-monsoon season (Dec –Jan 2017) to study the changes in groundwater quality with time and space. The analysis focused on the determination of water quality parameters namely color, odor, pH, EC, TDS, BOD, COD, Na, mg and Pb using standard procedures. General observation is that the Ground water in phreatic aquifers in Chennai city in general is colorless, odorless and slightly alkaline in nature.

The analysis of the collected samples reveals that the stated water quality parameters have not complied with the WHO standards, and the water is not fit for drinking and domestic purposes. The aquifer water was found to be highly contaminated in regions near Thirumangalam, Quaid-e-Millath, and College road and the reasons for the same was justified

The pollution level in the ground water in and around Cooum River was studied and inferred that the contamination in the aquifer is due to the infiltration of the polluted water in the Cooum River. The main reason for the pollution of the Coum River is the allowing of sewage to enter into it. This situation has roused due to the improper planning of the sewer systems in the past.

It is revealed from the studies that the excess pollution of the river directly impacts the ground water quality around it. The cleaning of the Coum River by proper sewerage system and plugging of the outfalls will ensure the regeneration of the aquifer and make the groundwater usable.

Key words: Aquifer, Cooum River, contamination, Infiltration, water quality