

# Quality Analysis of Mula Mutha River Water And Pollution Control Measures

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**Abstract-** Water is one of most important compound in the world. The Contamination and pollution of water is of great concern in the world for the developing countries like India. The question of water pollution has acquired a critical stage.

*MULA-MUTHA river is the most vulnerable water body in pune. Carrying the municipal and domestic waste and runoff from agricultural lands making poor quality of water. Despite of the various standard and laws are made by the government. The aim of the project is to analysis the river by diving it into various sample station*

**Keywords-** Mula mutha river, Pollution

## I. INTRODUCTION

The Mula-Mutha river is a river in western Maharashtra. It arises in the western ghats and flows eastwards until it merges with the Mula river in the city of pune. The mula mutha river is a river in pune, which later meets the Bhima river, which later itself meets the Krishna river and finally emptying into the bay of Bengal. The project lies within Pune Municipal Corporation ( PMC ), Pune Chinchwad Municipal Corporation and Kirkee cantonment Board Boundry. The river area Covered in this project along the land is aa banks. The total proposed area is 820 Hectares including river & river banks..

## II. LITERATURE SURVEY

**D.G. Kanase “ Review study on Mula Mutha river Rejuvenation Project ”** studied the physiochemical characteristics of major river of pune city in 2005. They studied and analysed the Mula-Mutha Rive. The analysis was carried out for the parameters namely p<sup>H</sup>, Acidity, Alkalinity, Total Hardness, Calcium, Magnesium, Chloride, Nitrate, sulphate and Phosphate. The data obtained by the analysis revealed that the p<sup>H</sup> is between 7.5 & 8.6, do, Chloride, Nitrate, Sulphate and Phosphate are within the desirable limits.

**B. More, C.S. Chavan “ Review study on Mula Mutha River Rejuvenation Project ”** carried out the analysis of Mula Mutha River in 2014. As per the result analysis, it is found that some stations are highly polluted by different pollutant like solid waste, chemical waste, organic & Inorganic waste. In present study the analysis area is confined to stretch of river Mula and Mutha. Mula river receives heavy loads of agricultural runoff through runoff sources. Mutha river since it passes through the city of pune receives heavy loads of domestic sewage with some industrial.

## III. PROBLEM STATEMENT

Collect the sample of water from the river. After collecting sample various tests are done like temperature, p<sup>H</sup>, COD, BOD, and etc. After that sampling stations are selected on the basis of pollution load. It will help in understanding the main source of pollution.

## IV. SCOPE OF PROJECT

Preparation of Environmental Monitoring Program and Management plan suggesting suitable methods for mitigating and controlling the pollution levels.

## V. RESEARCH METHODOLOGY

This involves collecting of water sample from mula-mutha river . To indicate the COD, BOD, PH values of the water for understanding the qaultiy analysis of water . Performing various test on water helps in understanding the various sources of pollution and to take preventive measures to stop it from polluting the river.

## VI. VARIOUS TEST PERFORMED ON WATER

- **COD:** The chemical oxygen demand (COD) is a measure of water and waste water quality. The COD test is often used to monitor water treatment plant efficiency. This test is based on the fact that a strong oxidizing agent, under acidic conditions, can fully oxidize almost any organic compound to carbon dioxide.

- **BOD** :- Biochemical oxygen demand (BOD) is the amount of dissolved oxygen (DO) needed (i.e. demanded) by aerobic biological organisms to break down organic material present in a given water sample at certain temperature over a specific time period.
- **DISSOLVE OXYGEN (DO)**: Dissolved oxygen (DO) is a measure of how much oxygen is dissolved in the water - the amount of oxygen available to living aquatic organisms. The amount of dissolved oxygen in a stream or lake can tell us a lot about its water quality.
- **PH**: PH is a measure of how acidic/basic water is. The range goes from 0 to 14, with 7 being neutral. PH is of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base. The pH of water is a very important measurement concerning water quality
- **Total solid** :- The matter which remains as residue upon evaporation and drying of water sample at 103°C – 105°C in an oven. This is called as Total solids.
- **Turbidity** :- The cloudiness or haziness in a fluid caused due to large numbers of individual particles that are invisible to our naked eyes is known as Turbidity.

**Preventive measure to stop pollution in river:**

- Dispose of Toxic Chemicals Properly
- Do Not Pour Fat and Grease Down the Drain
- Use Phosphate-Free Detergent and Dish Cleaner
- Dispose of Medical Waste Properly

**VII. RESULTS**

Sr no	Parameter	S1	S2	S3	S4
1	pH	7.82	5.24	5.62	5.76
2	Turbidity	4 NTU	15 NTU	11NTU	7NTU
3	Hardness	13ppm	92.58ppm	75ppm	112.2ppm
4	DO	3.2mg/l	0.5mg/l	0.7mg/l	1.9mg/l
5	BOD	9ppm	30ppm	42ppm	46ppm
6	COD	48ppm	40ppm	52ppm	62.5ppm

**VIII. CONCLUSION**

Increasing water pollution is a major problem in all rivers. Contaminated water is the biggest health risk and continues to threaten both quality of life and public health.

From our analysis on mula mutha river we concluded following points :-

1. The analysis and result clearly shows that river water quality has deteriorated mainly due to domestic sewage in case of river Mula and industrial effluents in case of Mula river.
2. It is clear from the present analysis that the environment of the Mula and Mutha river showed increasing load of pollution.

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