

# SEWAGE WATER TREATMENT PLANT

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## ABSTRACT

Users must concentrate their Sewage/Wastewater treatment process to ensure that it complies with regulatory guidelines. The main purpose of the Sewage treatment process is to remove the various constituents of the polluting load: solids, organic carbon, nutrients, inorganic salts, metals, pathogens, etc. Effective wastewater collection and treatment are of great importance from the standpoint of both; environmental and public health. Sewage/Wastewater treatment operations are done by various methods in order to reduce its water and organic content, and the ultimate goal of wastewater management is the protection of the environment.

**Keyword:** sewage treatment plant, water recycling, water reclamation

## 1. TITLE-1

A facility designed to treat wastewater, also known as sewage, and remove contaminants before its released back into the environment. These plants play a crucial role in public health and environmental protection by ensuring that wastewater is treated to a safe level.

STPs remove contaminants from wastewater, making it safe for discharge into rivers, lakes, and oceans, they also help prevent pollution of our water resource.

Sewage usually contains a high quantity of organic wastes and may also consist of inorganic wastes. It is essential to treat sewage before its entry into any water body. Why so? Sewage, if allowed to enter water sources without treatment, it will contaminate them; which is why it is essential to treat sewage properly before letting it into rivers or streams for example.

## 2. TITLE-2

The amount of putrescible organic material in sewage is indicated by the biochemical oxygen demand, or BOD; the more organic material there is in the sewage, the higher the BOD, which is the amount of oxygen required by microorganisms to decompose the organic substances in sewage. It is among the most important parameters for the design and operation of sewage treatment plants. Industrial sewage may have BOD levels many times that of domestic sewage. The BOD of storm sewage is of particular concern when it is mixed with domestic sewage in combined sewerage systems.

Sewage water treatment plants use a multi-stage process to purify wastewater, typically involving preliminary treatment (screening and grit removal), primary treatment (sedimentation), secondary treatment (biological processes), and sometimes tertiary treatment (advanced filtration and disinfection). The goal is to remove pollutants and pathogens, making the water safe for discharge or reuse.

### 3. TITLE-3

It might surprise you to know that we all drink and bathe in recycled water. The water we flush down the toilet is turned into potable water, and it is the job of sewage treatment plants to make this water fit for human consumption or release into rivers and oceans. Wastewater from sinks, baths, washing machines, toilets and other appliances has to go somewhere. After traversing miles of sewer network, it ends up in sewage treatment plants whose job is to treat and discharge it.

Sewage treatment plants collect, treat, and discharge wastewater, providing a service essential to environmental and public health. Without adequate treatment, sewage will leach into the environment and contaminate ecosystems. For example, sewage contains bacteria and chemicals that break down using oxygen in the water. In doing so, they use oxygen that fish and aquatic life needs to survive, so it needs treatment to preserve the ecosystem. Returning sewage/wastewater to a specified quality for safe discharge is the most crucial role of the sewage treatment plant.

### 4. CONCLUSIONS

In conclusion, wastewater treatment is an essential process that is critical in protecting our environment and public health. By removing contaminants from wastewater, we can reduce the risk of water pollution and the spread of waterborne diseases. This, in turn, helps preserve the delicate ecosystems that depend on clean water and ensure we have access to safe, clean water for generations to come.

As water scarcity becomes an increasingly urgent issue, wastewater treatment will become even more important. By investing in wastewater treatment infrastructure and technology, we can ensure that we can meet the growing demand for clean water and protect our planet and its inhabitants for years to come.

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### 6. REFERENCES

- [1]. Karia, G.L & Christian, R.A. (2012). Wastewater Treatment Concepts and Design Approach
- [2]. Metcalf & Eddy, Inc., (1972). Wastewater Engineering. New York: McGraw-Hill. ISBN 978-0-07-0411675-8.
- [3]. Water Supply and Sanitary Engineering by G.S. Birdie and J.S. Birdie
- [4]. Waste Water Treatment (English, Paperback, M.N. Rao)